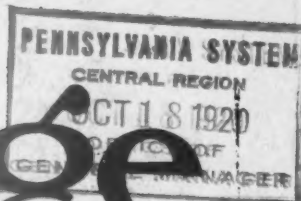


Railway Age



SECOND HALF OF 1920—NO. 16

NEW YORK—OCTOBER 15, 1920—CHICAGO

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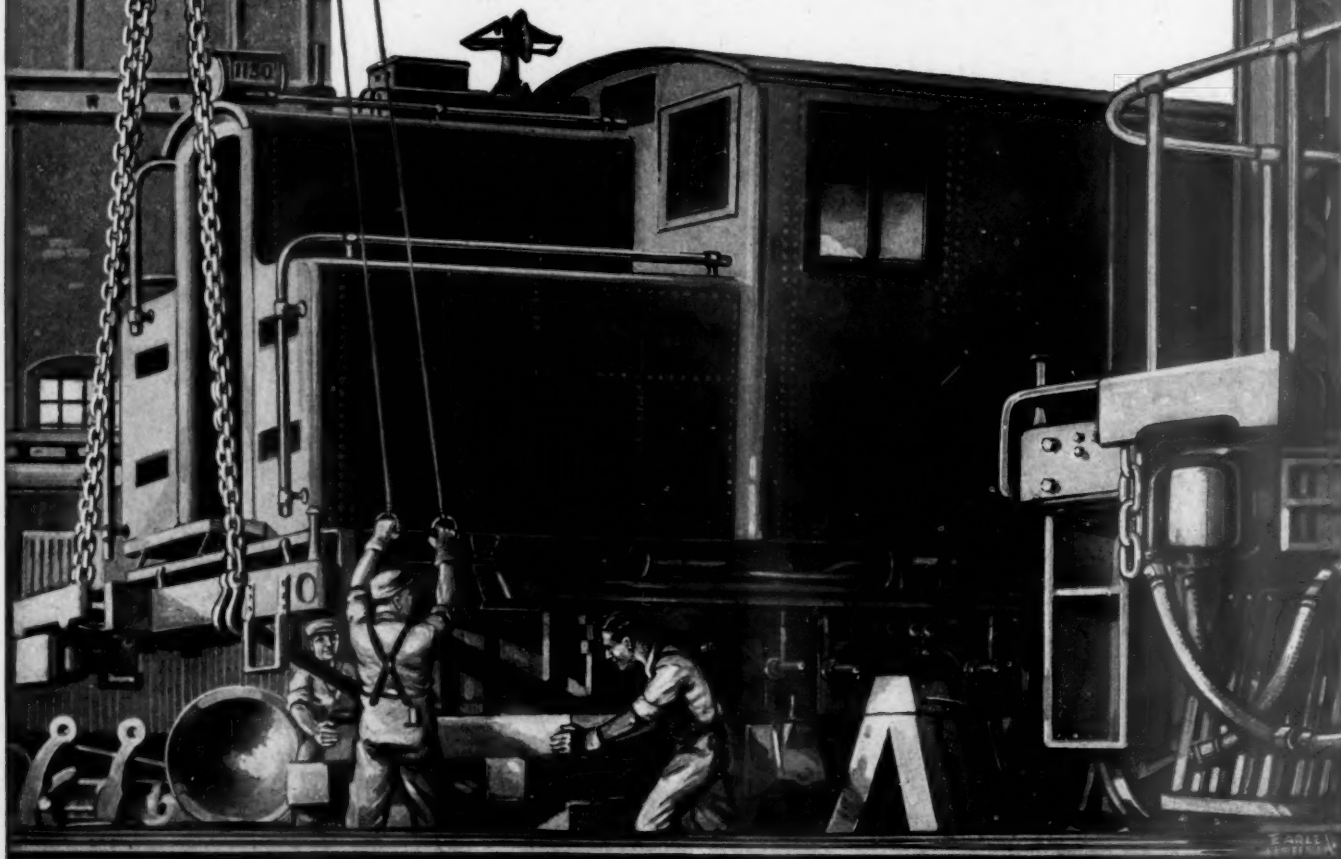
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EDITORIAL

Railway Age

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In the general news department of this issue, there is chronicled another step in the rehabilitation of the nation's railroads.

Rehabilitation of Public Opinion

In this instance the rehabilitation is not one of the physical properties but of public opinion and of the things which a railroad should stand for. Soon after the return of the roads to private operation, C. H. Markham, president of the Illinois Central, saw that we were entering a new era in railroading and entered upon a policy of announced co-operation with patrons of that road. This new work has been developed through advertising, publicity and the solicitation of complaints until now, direct interviews are being obtained with the farmers along the line concerning Illinois Central service and the needs and views of its farmer patrons. The facts brought back by the interviewer and placed before the officers and employees of that line, cannot but reveal defects in service and give new incentive to officers and employees to aid in the rehabilitation of public opinion.

An interesting example of newspaper enterprise is shown by a series of articles now running in the New York Tribune.

The Railroads Today

The articles are to be twelve in number and will discuss the problems and experiences of the carriers since the return to private management; each will be signed by a railroad president or chairman. This is written on the day on which the first of the articles has appeared. It is signed by Julius Kruttschnitt, chairman of the executive committee of the Southern Pacific and if the other eleven get down to basic facts as well as he does, the Tribune's idea will "go over big." However, besides admitting the value of the plan of publishing these twelve articles, recognition must also be paid to the fact that the executives have an appreciative audience. The public is interested now as it never was before. It will no doubt read the statements of the executives with interest and with a readiness to recognize that the railways are working with all the force at their disposal to give American business the transportation service it needs.

The recent slump in commodity prices and the general reduction in business activities may lead some railway officers to the self-comforting assurance of a lessened burden of traffic on the railroads this winter. However, with the movement of coal and grain far in arrears, it is doubtful if any appreciable

There Are Still a Few Weeks Left

reduction in transportation demands will take place, but even if this does develop, the responsibility on the railroads will not be greatly affected. This is especially the case in the maintenance of way department. The increased supply of labor came so late that its influence has been scarcely felt after a summer working season of extreme labor shortage. As a consequence, the tracks on many roads are not yet in proper condition for the winter and it behooves all maintenance officers to do their utmost in the remaining weeks of good weather to perfect the preparations for cold weather. In

view of the fact that labor is now more plentiful, the managements can greatly aid and encourage these eleventh hour activities by delaying contemplated reductions in the maintenance of way forces as long as open weather prevails.

The railroads of the United States and Canada are making progress in increasing the efficiency of their operations, as is

Supervision and More Supervision

evidenced by the increase in their average daily movement of cars, the reduction of the number of cars under load awaiting movement, etc. These results, which are being attained in the face of an adverse bad-order car situation, a shattered morale among the employees, and an accumulation of traffic greater than ever before experienced, indicates the rapidity with which the roads are "coming back." At the same time, the railways are still far from being "out of the woods." There is still an acute shortage of cars in many localities, an extraordinarily heavy coal movement must be maintained if the needs of the country are to be met, and cold weather with its interruptions to service is only a short time off. The need for an intensive drive for a maximum car movement, therefore, prevails unabated. A leading operating officer recently summarized the problem in the one word "policing," or intensive supervision—supervision to see that *each* shipper loads *each* car promptly and to its capacity; that *no* car is delayed in movement necessarily and that the myriad operations incident to the movement of cars are performed expeditiously. The problem is nation-wide; it extends over entire systems, but fundamentally its solution depends upon the local officer watching the individual car.

The Locomotive Inspection Act was framed primarily to prevent unsafe practices in the operation of locomotives. Its

Disregarding Locomotive Inspection Rules

provisions are reasonable and should be observed by all railroad employees even if no penalties were prescribed for failure to live up to the rules. Nevertheless minor infractions of the law seem to be quite common and occasionally glaring violations are brought to notice. This was the case in the investigation of an accident that occurred last July which has been made the subject of a report by the chief inspector. While a Pacific type locomotive was drawing a passenger train, the crown sheet failed causing fatal injuries to both the engineer and fireman. The investigation showed that the locomotive, which had a straight top radial stay boiler of the usual type of construction, bore no evidence of overheating or strain, but in the section which failed 37 crown stays were found broken and the sheet pulled off 12 others so that the steam escaping from the holes entered the cab causing the deaths of the crew. In order to guard against broken staybolts, the Locomotive Inspection Act requires that they must be inspected monthly and their condition noted on the inspection report posted in the cab. The records showed that this locomotive was inspected 20 days before the accident occurred and the crown bolts found in good condition. However, the investigation following the explosion disclosed that the ends of the broken

bolts were covered with scale which the inspector regarded as conclusive proof that they were defective at the time the last monthly inspection was made. Further inquiry developed that the inspector, under oath, swore to work which he did not perform. Furthermore, the safety valves were reported to have been set though the locomotive had not been fired up on the date given. The rules require that two steam gages shall be used in setting safety valves but this provision also was disregarded. The chief inspector in commenting on the accident recommends that tell-tale holes be required in all crown stays and staybolts and also renews the recommendation that automatic fire doors be required. Regardless of the necessity for these additional safeguards, it is evident that due respect for the law and strict observance of the provisions of the act would have avoided this accident. When such disregard of the law is shown to have existed on one road, it might be well for the officers of other roads to assure themselves that similar practices do not exist in their territory.

Fuel economy commences with the selection of the fuel. Discrimination in the purchase of locomotive coal is essential

The Ninth Fuel Commandment: Discrimination

to locomotive efficiency and may therefore be regarded as one of the ten fundamental fuel commandments. It would not be possible to discriminate in the purchase of locomotive fuel coal without a thorough knowledge of the available fuel supply, the characteristics of the seams from which the coal will be mined, the facilities for cleaning and for sizing the coal. Chemical analyses do not furnish a reliable index to the value of fuels for locomotive service; extensive locomotive tests under practical service conditions should invariably be conducted to establish the relative value of available fuels. The cost of such tests, even if conducted on the most elaborate scale, is a trifle compared to the amount that may be saved to the railroad through the judicious purchase of fuel. Purchasing agents would do well to respect relative fuel values as determined in this manner even where the tests indicate that the most efficient fuel cannot be purchased at the lowest price. It is one of the most obvious duties of a department responsible for the economical use of fuel to determine the relative value of every available fuel and assemble this data in such form that it will constitute a practical basis for future fuel purchases.

One of the greatest and the wisest of Europe's former rulers, Queen Catherine of Russia, attributed the successes of her

Queen Catherine's Policy

reign in a large measure to a fixed policy regarding her advisers. Having once selected a man for an important post she never permitted the office to change hands. Her appointments were made with great discretion and, knowing that they would receive her unwavering support, her statesmen in turn were enabled to develop strong policies for the good of the nation without fear of interruption or thought of personal disfavor. The railroads are now in a better position to work for the future than they have ever been, they can adopt constructive policies looking toward the future with a greater assurance than they have ever felt as to the ultimate outcome. It is of more importance now than ever that they may rely upon a competent personnel for the execution of these plans for the future upbuilding of the property. What stronger assurance of this would be possible than the confidence of every young subordinate officer in the belief that his best interests lay in the future development of the road? What would destroy that confidence quicker than a shifty policy in respect to filling higher offices? What more destructive influence can you imagine than the feeling on the part of

every young officer that his best interests lie elsewhere? The railroads have been granted the prospect of a brighter future than has been looked for in at least ten years. They should extend the same assurance of a future to every deserving employee.

The action of the Board of Direction of the American Railway Engineering Association in deciding by unanimous vote

A. R. E. A. Declines to Join Federation

not to join the proposed federation of American engineering societies is of much interest to members of this organization and other civil engineers in railway service. Because of the long record for constructive, aggressive work which the Railway Engineering Association has built up for itself, its action in this matter will carry much weight with other organizations such as the American Society of Civil Engineers, whose members are now being polled on this question. The question of the formation of a federation or an affiliation of engineering societies has been prominently before engineers for several years. Engineering Council came into being as a result of this agitation but certain conditions inherent in its form of organization tended to prevent its functioning completely and there has been a demand for a more representative organization which will offer a stronger appeal to a larger number of engineering societies. In declining the invitation to join the proposed federation of engineering societies, the American Railway Engineering Association undoubtedly reflects the sentiment of the majority of civil engineers in railway service, who are in favor of co-operation among engineering societies on matters of common interest, but who are opposed to the particular form of federation which has been proposed. To view this action in any other light is without justification.

A recent editorial in the *Railway Age* pointed out the need for improved forging and heat treating equipment in railway

The Pyrometer in Locomotive Operation

shops, strong emphasis being placed on the value of pyrometers in securing more efficient furnace operation, thus saving fuel and reducing the amount of spoiled work. The field for the use of pyrometers is by no means limited to railway shops, however. Tests have shown that these instruments when applied to superheater locomotives give the enginemen a knowledge of operating conditions that can be obtained in no other way. The increased tonnage rating of locomotives equipped with superheaters and the saving in coal are proportional to the number of degrees of superheat attained. Anyone of a dozen conditions may operate to decrease the effectiveness of superheaters and some means must be provided to place a check upon their operation. Simple, rugged pyrometers, designed to withstand severe vibration, have given satisfactory results under actual service tests and afford a constant check on locomotive performance. The thermo-couple usually is inserted in the steam pipe above the valve chamber, the pyrometer indicator being placed where it can best be seen by the engineman. A low reading of the pyrometer indicates at once that something is wrong. The flues may be plugged up; there may be a steam or air leak in the front end; the damper may remain closed; or, the water level may be carried too high. In addition, it is claimed that a locomotive operated on a small proportion of its tonnage rating will show a proportionately low pyrometer reading due to decreased draft. While not indicating just which of the defects exists, the pyrometer is an effective check on the efficiency of locomotive operation. That this fact is becoming more fully appreciated by railroad officers is illustrated by the recent purchase of 20 superheater locomotives to be equipped with pyrometers.

Among the most interesting features of the financial news of the day are the rumors that are being originated concerning proposals for consolidations of various railroad lines. There have been so many of these that few roads have been left out of consideration. Several observers who have noticed this extensive

Proposed Railroad Consolidations

crop of rumors have drawn attention to the provisions of the Transportation Act relative to this matter. Section 5 of the Interstate Commerce Act (as amended by the Transportation Act) begins: "The commission shall as soon as practicable prepare and adopt a plan for the consolidation of the railway properties of the continental United States into a limited number of systems." With this provision of the law in mind it would hardly seem likely that any extensive plans for consolidations would be announced, at least until the commission's plan is made public. Another interesting side light on the whole matter is contained in the report of the committee on railroad securities of the Investment Bankers Association which held its meeting in Boston last week. The report said: "The logic of the situation unmistakably points towards consolidations where economies can be effected and the satisfactory handling of traffic promoted. While in the judgment of the committee the law has wisely made such consolidations permissive rather than compulsory, sound business judgment will perceive the business opportunities and can be relied on to bring about this logical solution of many of the problems involved." It is not to be denied that some of the consolidations covered by the rumors seem to follow out the idea represented in this statement. At any rate, the matter of consolidations is of great moment at the present time and indications of progress to that end will be watched for with interest.

Railways Should Be Enabled to Pay Their Bills

THE CREDIT FACILITIES of the entire country have constantly been under a severe strain for months. One of the by no means unimportant reasons for this has been that many railway companies have fallen far behind in the payment of their bills to concerns from which they have bought equipment, materials and fuel. The failure of the railways to pay so large a part of their bills has been largely due to conditions arising from government control. The government owes most of them large amounts of money. The companies being rendered short of money by this situation have resorted principally to two devices. One has been to borrow large amounts from the banks and the other has been to stand off indefinitely the concerns from which they have bought equipment, materials and fuel. The concerns to which the railways owe money on current accounts have been obliged to resort to the banks and borrow large sums of money. Many railway equipment, supply and fuel concerns in consequence of this situation have practically exhausted their credit.

All this is bad business. It ties up large amounts of funds which ought to be set free and put to work. The railway companies are not principally responsible for the situation, although we suspect that some of them do not pay their bills as promptly as they could. At any rate, co-operative efforts should be begun at once by government officials, bankers and railway managers to remedy the situation. The treasury department's course in withholding from the companies loans which the Interstate Commerce Commission has authorized under the provisions of the Transportation Act is aggravating and threatens to still more seriously aggravate conditions. The plain intent of the act was to provide funds to tide the railway companies over the period of transition from government to private control and the failure thus far of the treasury department to proceed in accordance with the spirit of the act

calls for condemnation. Settlements of accounts between the Railroad Administration and the railroad companies should be expedited as much as practicable, even though this requires compromises in which both sides will have to forego some of their demands. The railway companies should pay just as much as they can of what they owe to the concerns from which they have made purchases and pay it as promptly as possible. With the nation's supply of working capital as short as it is now, the protracted withholding of hundreds of millions of dollars from concerns to which it rightfully belongs and which need it to enable them to carry on their normal business operations has an adverse influence upon the prosperity of the entire country.

Is One Million Carloads

Weekly the Limit?

WE RAISE AGAIN this week a question we raised last week in an editorial entitled "The Significance of the Recent Carloading Statistics." This question is whether, with existing facilities, 1,000,000 cars of freight is practically the maximum number the railways can load and move in a week.

The Class I railways in the week ended September 25 set a new record for carloadings in the year 1920, and when more complete data is available it may be shown that they broke all past records. They loaded 994,687 cars as compared with 987,041 in the same week of 1919, and the record made in the corresponding week of 1919 was one of the highest ever attained in any previous year. It will be noted, however, that the carloadings reported again failed to reach the 1,000,000 mark, although the traffic offered continued to be heavy and the railway managements were putting forth great efforts to increase efficiency.

It seems certain from the data now available that when complete reports are compiled it will be found that in September and October, as well as in August, the railways under private operation have loaded and moved more freight than ever before in any equal period under either private or government operation. Theoretical considerations certainly suggest that it ought to be possible with the existing facilities to increase still more the amount of business handled. On the other hand, facts are stubborn things, and the fact is that, while since the first week in June these roads have increased the number of cars loaded from 768,974 to 994,687, the increase in the number of carloads moved within the last ten weeks is comparatively small. The number moved in the first week of August was 942,150. In the last week of August it was 985,064. That was the highest record reached until the week ended September 25, and in the latter week the record made, although the best of the year, was less than 10,000 cars better than that made in the last week of August.

It is to be hoped that while business continues heavy, and weather conditions are still favorable, railway officers from the highest to the lowest will make still greater efforts to increase the amount of traffic moved. The question of what is the maximum business it is practicable to handle with existing facilities is one of great importance. The settlement of it will give us a good measure of what increases in facilities are required.

There are those, on the one hand, who have contended that efficiency of operation could be so increased that with existing facilities the railways could handle a much larger business. There are those, on the other hand, who have taken the position that it is practically impossible to handle much more business with existing facilities, and that future substantial increases in the amount of traffic handled must be gained, if gained at all, by enlargement of facilities. Theories as to what can be done, or ought to be done, are all right in their place, but when facts persistently refuse to fit theories,

logic requires the conclusion to be reached that there is something wrong with the theories.

In the long run there is no appeal from facts, and it is still a fact that with all the efforts that are being made the Class I roads do not succeed in moving more than around 1,000,000 loaded cars per week.

Increasing Confidence in Railroad Securities

THE TENDENCY of the prices of railroad securities during the year 1920 affords material for an interesting study. The joint committee of Congress reported the revised Esch-Cummins bill to both houses on February 17. It provided for the return of the railways to private operation, and also for a plan of regulating rates and a plan of settling labor controversies which many believed would, if adopted, go far toward solving the problems of securing to the railways adequate net returns and of preventing serious labor disturbances. In consequence, there followed at once small increases in the prices of railway securities.

Developments indicated, however, that investors were "from Missouri" and after all the years of unwise and unfair regulation had to be "shown" that there was really going to be a change made in the government's policy of dealing with the railways. President Wilson signed the Transportation Act on February 27, 1920. The changes in the market prices of railway securities showed that even the Transportation Act becoming a law did not have much effect upon them. The return of the railways to private operation was followed by several adverse influences, including especially the "outlaw" switchmen's strike. In consequence, right up to the time when the Interstate Commerce Commission rendered its decision in the great rate advance case the prices of railway securities remained almost where they were when the Esch-Cummins bill was favorably reported by the joint committee to Congress.

Since the rate advance decision was rendered on July 31 railway securities have lost their sluggishness and have pretty steadily advanced in price. There also has been a large increase in the number of them bought and sold on the New York Stock Exchange. Table I shows the changes which have taken place in the prices of certain of the principal bond issues of twelve railway systems located in different parts of the country. It will be noted that for some reason the prices of most of these bonds do not show very large increases since the Transportation Act was reported to Congress. Almost all of them, however, show increases and some of them substantial increases since the rate advance decision of the Interstate Commerce Commission was rendered.

Table II gives the prices at which the stocks of the same railways sold at the high points in 1916, and also the prices at which they have sold at certain times during the present year. It will be noted that the prices of most of these stocks advanced slightly within the ten days between the time when the Transportation Act was reported to Congress and the date on which it was signed by President Wilson. Most of them subsequently declined, with the result that they were lower on the day before the Interstate Commerce Commission decided the rate advance case than they were when the Transportation Act was signed.

Since the rate advance decision was rendered the prices of all of them have substantially increased. The lowest prices paid for them on the day before the rate decision was rendered averaged \$67.00, while in the week ending October 9 it averaged \$78.00, an increase of \$11.00 a share. Some of the stocks showed quite notable advances. Atlantic Coast Line increased from \$85.00 to \$99.25; Baltimore & Ohio from \$31.125 to \$46.50, Norfolk & Western from \$88.25 to \$101.00, and Northern Pacific from \$70.625 to \$89.00. The

number of railroad shares traded in in the week ending October 2, 1920, was 1,683,700, while in the week ending October 9 it was 1,884,300.

The average high mark reached in 1916 by the stocks of the twelve trunk line railroads selected for comparison was \$104.00. The average price of the same stocks in the week ending October 9, 1920, was only \$78.00. The difference between the prices of 1916 and 1920 is large, and with the

TABLE I

| Bonds | Low, Feb. 17, 1920, day before R.R. bill was reported | Low, July 30, 1920, day before rate increase was announced | Close, week ending Sept. 24 |
|---|---|--|-----------------------------|
| A. T. & S. F. Gen. 4's..... | 76 | 73½ | 76½ |
| Atlantic Coast Line Con. 4's, 1952..... | 75 | 72½ | 76 |
| B. & O. 1st 4's, 1948..... | 63 | 59½ | 69 |
| Illinois Central Ref. 4's, 1951..... | 82 | 81½ | 81 |
| C. M. & St. P. Gen. 4½'s, 1989..... | 74 | 68¾ | 74 |
| C. R. I. & P. Ref. 4's, 1934..... | 63¾ | 64½ | 68½ |
| N. Y. C. 4's, 1931..... | 83 | 77½ | 83 |
| Nor. & West. Con. 4's, 1996..... | 75½ | 71¾ | 76½ |
| Nor. Pacific Prior Lien 4's, 1997..... | 75 | 73¼ | 76½ |
| So. Pac. Ref. 4's, 1949..... | 69½ | 66 | 70 |
| Southern Ry. Con. 5's..... | 83¾ | 80 | 86½ |
| Union Pacific 1st 4's, 1940..... | 81¾ | 81 | 80½ |

average of the stocks of these companies only \$78.00, and with only three of them selling at practically par or better, it is evident that these companies could not at present do much financing by the sale of stocks. On the other hand, the increase in prices which has occurred since the end of July is by no means discouraging, especially in view of the conditions under which it took place. Interest rates have been so high for a long time as to hinder investments in bonds bearing low rates of interest, and in stocks. The present high income tax rates also tend to interfere with large investments in tax bearing securities. It is a notable fact, however, that while formerly industrial stocks constantly were advancing while railroad stocks were declining, recently the tendencies have been reversed. The railroad stocks have been advancing while industrial stocks have been declining.

On the whole, the figures show that the rate advance decision of the Interstate Commerce Commission has had a strong tendency to increase the confidence of investors in rail-

TABLE II

| Railroad stocks | High, 1916 | Low, Feb. 17, 1920, day before R.R. bill was reported | Low, Feb. 27, 1920, day before President signed R.R. bill | Low, July 30, 1920, day before rate increase was announced | Close, week ending Oct. 9, 1920 |
|-------------------------|------------|---|---|--|---------------------------------|
| A. T. & S. F..... | 108¾ | 78½ | 81½ | 79½ | 88 |
| Atlantic Coast Line.... | 126 | 86¾ | 87 | 85 | 99¼ |
| B. & O..... | 88½ | 29½ | 33¾ | 31¾ | 46½ |
| Illinois Central..... | 109¾ | 84 | 85½ | 83 | 95 |
| C. M. & St. P..... | 102½ | 31½ | 36¾ | 32½ | 40½ |
| C. R. I. & P..... | 45¾ | 25¾ | 32¾ | 34¾ | 38 |
| N. Y. C..... | 114¼ | 68 | 69½ | 67½ | 79½ |
| Nor. & West..... | 147½ | 91 | 95 | 88¼ | 101 |
| Nor. Pacific..... | 118¾ | 71½ | 74½ | 70¾ | 89 |
| So. Pacific..... | 104¾ | 91½ | 92½ | 89½ | 99 |
| Southern Ry..... | 36¾ | 20 | 22¾ | 27 | 31½ |
| Union Pacific..... | 129¾ | 113¼ | 116½ | 114½ | 126½ |
| Average..... | 104 | 66 | 69 | 67 | 78 |

way securities. If the net returns earned by the companies on the new rates prove to be as large as the Commission estimated when it rendered its decision, the advance in the prices of railway securities should be continued. While under conditions of great general business activity and prosperity most railways cannot hope to earn and pay as large returns as the more successful industrial companies, the rate-making provisions of the Transportation Act should have the effect of making the return which the railways will earn much less uncertain than the returns of industrial concerns. Certainty of return is quite as attractive to many investors as the possibility of large returns when this possibility is obtained at the risk of receiving only small returns when business is bad.

Letters to the Editor

The Qualifications of a Terminal Superintendent

MINNEAPOLIS, Minn.

TO THE EDITOR:

In reading the editorials in recent issues of the *Railway Age* in which you have pointed out those measures which should be adopted by the railroads to increase the efficiency of their operation, I think that you have failed to place sufficient emphasis on one of the most important features of railway work—the efficient operation of terminals. Without their proper functioning, the entire railway machine is thrown out of gear, as was demonstrated very forcibly on some of the roads during federal control.

Too many terminals are in the charge of men of the old school, while others are in charge of young engineers or chief clerks without experience in this work. The operation of a terminal requires more than executive ability. The fact that a man has made a good division engineer or a good agent will not fit him for a position as terminal superintendent or terminal trainmaster. Rather I think that the roads should pick out their strongest engine foremen, men, with good education, transfer them into the yard office as clerks or assistant chief clerks for a time and then make yardmasters out of them. On the other hand, a good, live, chief yard clerk can be put out in the yard as a switchman or an engine foreman for a time, and later developed into a high grade assistant yardmaster and fit himself for promotion through this channel.

The trouble with the average yardmaster in charge of a large terminal today is that he is working along the lines of the least resistance, doing things in the same way in which he did them 15 years ago and seeming to be satisfied to let things drift along, finding it easier to make excuses than to install a system which will move cars properly and efficiently. During federal control I was connected with the central organization of the Railroad Administration at Washington, in which capacity I traveled over the country checking terminals and terminal work. This afforded me an opportunity to see how the different roads were operating their terminals and to study their organizations. In the majority of the yards I found that the men in charge had been there for years and that, with few exceptions, they were handling the work about the same way in which it had been handled for the past 10 or 20 years. Of course in many places they were handicapped by a lack of proper facilities, but at many points I found that they were not taking advantage of the facilities which they had.

Many yards are in bad shape on account of an utter lack of classification. Without proper classification there is sure to be much unnecessary rehandling and reswitching of cars. The rehandling of these cars or at least a large part of it can, in my opinion, be eliminated if the yardmaster will devote a little time to providing a proper classification. As a traveling yardmaster on one of the largest trunk lines in the New York territory, I was called upon to straighten out some badly congested terminals, and in most cases I found that the cause of a yard being blocked was due to it being out of classification.

There also seems to be a lack of proper organization of the clerical forces, some of the old-time yardmasters having little idea about the building up of an office organization, and paying little attention to this phase of their work. Few yardmasters understand that it is just as important to move

an empty car from an industry promptly and start it on its way to be loaded again as it is to place the load in the first place to be unloaded. Cars standing still, either loaded or empty, are not earning money. There is nothing on a railroad that will earn more money for it than the speeding up of the movement of cars through terminals.

Not long ago I was general yardmaster in the unified terminals at Seattle, at a time when the superintendent wanted to make a special effort to see how much he could speed up the terminal switching. We made a check of the manner in which several days' business was handled before the beginning of the drive and then checked the cars handled during the drive, as a result of which we found that without any additional power or expense we had reduced the time required per car from the time of its arrival until its departure, an average of 30 hours. This was brought about by simply getting after every one to move cars promptly. I have always found it advisable to employ an extra yardmaster who can be assigned to the industrial territory to call on the patrons of the line to see how they are being served and at the same time to hasten the release of cars.

In my travels around the country I have come to the conclusion that much can be gained by the railways if they will give more thought to the organization of their terminals, instead of resorting to strong-arm methods every time they are confronted with congestion.

F. H. GARNER.

Solution of the Freight House Problem

CLEVELAND, Ohio.

TO THE EDITOR:

Investigation of many large terminal freight houses will show far more inbound merchandise waiting to be unloaded than can be handled with present methods. The result is temporary embargoes which reflect on the outbound operation at other points. The same is also true of the outbound platforms.

This condition has been attributed to three causes: lack of equipment, inefficiency of labor, and lack of co-operation on the part of shippers or receivers in moving freight promptly on its arrival. However the real reason for congestion in most of the freight houses is the antiquated methods used to handle freight. There is also a general tendency on the part of the officers to ease up in their old time efforts to instil loyalty in their men, and to secure efficient work. There is only one solution to the freight house problem—the installation of methods and appliances that will develop more intense effort, and increase production per man.

The following indicates what can be accomplished along these lines. During 1917 the writer was assistant depot master at one of the large freight houses on a middle western road. This house then handled, and has continued to handle up to the present time, an average of 100 tons per day per gang of one checker, one truck loader, and two hand truckers. In the latter part of 1917 the writer was called to a large terminal on the same road to assist in making an analysis of the operating conditions of a double deck freight house. The records showed that during October, 1917, eighty men handled a total of 6,798 revenue tons of L. C. L. freight through the house, with hand trucks, at a cost of 99.6 cents per ton including supervision, approximately 85.3 tons per month per man. After studying the problem, a plan was suggested whereby 48 men would handle 6,798 tons with hand trucks, electric tractors and four-wheel platform trucks at a cost of 72 cents per ton including supervision. The proposed method indicated a saving of 27.6 cents per ton, and an increased output of 56 tons per man per month.

The plans were approved, equipment purchased and installation made in December, 1917.

Analysis of operation in January, 1918, showed that 42.3 men handled 6,106 revenue tons at a cost of 72.8 cents per ton—0.8 cent above the estimated cost. The output figure developed was 144.3 tons per month per man, or three tons above the estimate, reducing the man power approximately 47 per cent and the cost per ton 27 per cent and increasing the production per man 69 per cent. Assuredly this was prior to government control and General Order 27, Supplement 7, and various addendas. However, government control did not alter the situation. A check on the operation of the same freight house was again made, covering 1919 when an analysis of monthly operation showed 71.8 men handling 13,578 revenue tons at a cost of 74.2 cents per ton. This included all increases in wages granted in various awards up to January 1, 1920. The output per man per month was 189 tons. Comparing this with the 1917 operation, we find that with 8 less men, 6,780 revenue tons more per month were handled at a decrease in cost of 25.4 cents per ton, or 189 tons per month per man in 1919 against 85.3 tons per month per man in 1917.

On January 1, 1920, additional changes were necessary, due to the "national agreement terms." To determine the effect of these changes, a study was made covering the month of March, 1920, two years and four months after the first installation of efficient methods for handling freight. This study revealed 67.5 men handling 17,025 revenue tons at a cost of 79.9 cents per ton including supervision, and an output of 255 tons per man per month. With 12.2 men less in 1920 than in 1917, almost three times as many revenue tons were handled, the cost still remaining 20 cents per ton less than in 1917. The output per man per month in 1920 was 252 tons, as against 85.3 tons in 1917.

This is a fair example of what can be accomplished by more intense methods of increasing the output per man. They can be duplicated in the majority of terminal freight houses of the country. The studies were made by the writer, and after the installation of equipment the operation was turned over to the local operating force, to whom the entire credit is due for the remarkable showing during the past two years.

W. G. BRIDGEMAN,

Terminal Engineer, The Lakewood Engineering Company.

Icicles of Inactive Material

TO THE EDITOR:

"Frozen Material Stocks," your editorial in the issue of August 27, appeals to the officers directly in charge of the handling and accounting of material stocks. Practically every one so concerned will welcome the day when the necessity of accurately accounting for all unapplied material is appreciated. But the writer heartily agrees with the general storekeeper in his communication, "The Cart Before The Horse," in the *Railway Age* of September 17, and believes that no comparison can be made until such a time as the proper facilities are furnished those handling stores. On certain roads the general storekeeper and staff are without adequate buildings, help and equipment.

It takes as long to develop material men as it does skilled mechanics, and in a great many cases they are paid less than even mechanic helpers. The horse in this case seems to be the storage facilities and material men who must ultimately be depended on to make an accurate record of unapplied material possible. Is there not some way to arouse interest in the material assets to the extent that means would be provided to properly protect this investment?

Another obstacle in arriving at any comparison of material stocks between roads, is the fact that some companies

have adhered more closely than others to standard equipment, and the writer personally knows of cases where the same class of car or locomotive requires numerous designs of the same detail. Further, changes of design are of frequent occurrence and the material in question would barely be received before it is obsolete. Material stocks cannot be transferred or built up anywhere near as quickly as designs can be changed by mechanical engineers. Frequent change of design provides an ideal climatic condition for icicles of inactive material.

DIVISION STOREKEEPER.

Suggestions for the Railroad Section of the A. S. M. E.

BEECH GROVE, Ind.

TO THE EDITOR:

The letter of Prof. A. J. Wood, published in your September 17 issue, commenting on the new Railroad Section of the A. S. M. E. and the suggestion that ten subjects be submitted for discussion, prompts the writer to suggest the following subjects.

In their selection it is recognized that they are in some respects already under investigation by existing committees of the various branches of the American Railroad Association, but since the personnel of the Railroad Section of the A. S. M. E. will differ from the personnel of the A. R. A. committees and sections, in that the Railroad Section of the A. S. M. E. will be made up of representatives of the supply and manufacturing companies, various specialists in the field of consulting engineering, members of the engineering faculty of various universities, and those actively engaged in railroad work, it is reasonable to assume that even though discussions and investigations may parallel one another, on account of the more general viewpoint which members of the Railroad Section of the A. S. M. E. may have as compared with the A. R. A., nothing can be lost in such parallel discussions or investigations.

No attempt has been made to arrange the following in the order of their importance:

1. Development of the standard service test code for the testing of various locomotive and car specialties.
2. Investigation and possible revision of existing ratios of locomotive proportions and designs.
3. Development of a standard analytical method of steel freight car construction, in proportioning and connecting component parts.
4. Investigation of possibilities of automatically controlling the cut-off of locomotives and the probable utility of such devices.
5. The investigation and development of improved methods and practices in journal lubrication, particularly on freight cars.
6. Discussion of the design and development of shop equipment for the repairs and maintenance of steel freight cars.
7. The relative merits of compressed air and electric power as a means for the operation of shop tools, both as to economy of generation and distribution.
8. Discussion of the general subject of electrolysis or pitting of locomotive boiler tubes.
9. The relative merits of the specific applications of the various methods of freight train loading or tonnage rating systems.
10. The mechanical aspects of freight handling and crating, both from the standpoint of its quick and economical handling in freight houses, as well as improved methods in crating and stowing in cars.

E. S. PEARCE,

Mechanical Engineer.

Some Impressions of South American Railways

S. T. Henry, Vice-President of American International Corporation, Writes of His Trip on the Transandine

S. T. HENRY, vice-president of the American International Corporation, New York City, now traveling in South America has written a very interesting memorandum regarding his trip over the Andes mountains from Valparaiso, Chile, to Mendoza, Argentina, on the Transandine Railway, from which the following is abstracted because of its interest to American railway men:

The Andes mountains rise to heights of from 12,000 to 19,000 ft. in the vicinity where the Transandine crosses them. The Transandine Railway saves about 20 days between Buenos Aires and Valparaiso as compared with the time required to go around through the Straits of Magellan by steamer. It also actually enables passengers from Buenos

usually are on long trips requiring clothing for all seasons. Many of them are going for permanent residence elsewhere. This combination produces heaps and heaps of hand baggage. Every available space in the cars is stacked high. And so it is on all South American trains.

About 15 minutes before leaving-time, a gong was sounded by some railroad employee. A little later a large bell was rung. After another few minutes, the conductor walked up and down the platform loudly clapping his hands. A couple of minutes of this convinced him it was safe to blow the police whistle he carried. Finally, the engineer blew the locomotive whistle and we were off. More ceremony than launching a 10,000 ton ship. But so it is in Chile, and in the rest of South America as well, to a greater or less extent. Starting a train is a real event.

For about an hour we followed a mountain stream, the narrow valley gradually shut in more and more. The mountains became closer and higher on all sides. The track was higher and higher above the water. The big snow-capped tops were now where we could make out the depth of the perpetual snow on them. Gradually we went right into the heart of the mountains, until suddenly they were ahead of



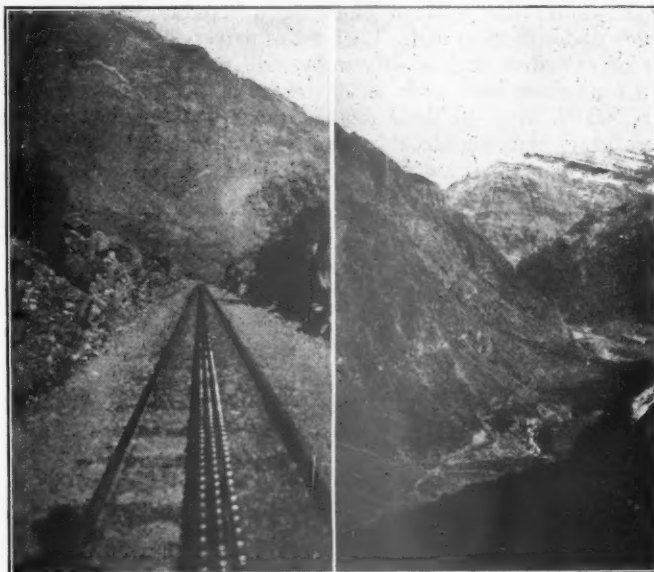
The Top of the Andes Mountains

Aires and vicinity to reach New York as quickly by steamer from Valparaiso up the West coast of South America and through the Panama Canal as by direct steamer up the east coast. Travelers from the United States to South America usually go down one coast and return via the other, using the Transandine. Travelers from the east coast of South America destined for Pacific ports make a great saving in crossing the Andes by this route. People on the west coast, south of Antofagasta, Chile, usually go to Europe from the east coast ports, which they reach over the Transandine. These various currents of international travel bring together on this line a great mixture of nationalities, personalities and types. In describing his trip, Mr. Henry said:

We were aroused at 5:30 in the dark of an early winter morning in the mountains, with no heat in the hotel. None of us took a bath that morning, not even the English. After a breakfast of rolls and coffee—I had provided apples in advance—we boarded the train at 6:45.

The train was made up of a locomotive, a baggage car and five passenger cars. The gage of the track is a meter, or about 40 in. The cars were surprisingly clean, comfortable and easy riding. Each passenger was assigned to a seat. The seats are arranged the same as sections in a Pullman car, so the four of us had a section to ourselves. It was well that we did, for every passenger seemed to have all the hand baggage that could possibly be mustered. And thereby hangs a tale:

Each passenger is allowed only 50 kilos or about 110 lbs. of baggage. The excess is charged for at the rate of about 15 cents (U. S.) gold a pound. There is a limit on hand baggage, but it never seems to be enforced. The passengers



On the Left, the Triple Rack on the Seven Per Cent Grade. On the Right, a View on the Way Up the Seven Per Cent Grade. The Track at the Point from Which the Picture Was Made Is About Half a Mile Almost Directly Over the Track That Shows Below

us, behind us and on both sides, with only a narrow streak of sky above us.

From this point on we saw such scenery as is visible from none of the railroads we had ever traveled in the United States or Canada. The trip over the northern routes in the States is wonderful. The Colorado routes are splendid. The Canadian Pacific trip cannot be excelled. Nor does the scenery on the Transandine lead one to depreciate any of these. It is totally different.

The difference lies chiefly in that the railroad is in the big mountains. It does not pass by great wonders like Mount Stephen on the Canadian Pacific nor over them in the

way that the Moffat road does, but right in among tremendous towering ranges that come together with only narrow V-shaped gorges between.

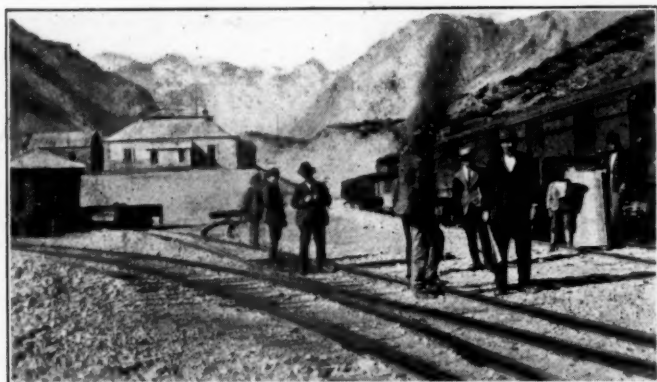
Seven Per Cent Grades

The railroad grade is developed at from 5 to 7 per cent up the side of these V-shaped gorges. When well toward the head of the gorge the line crosses and returns on the other side. Grades of 3 per cent on the Rio Grande in Colorado seem mighty steep. When the train started up a long 7 per cent stretch on the side of the gorge, one wondered what would happen if a coupling broke or the engine blew a cylinderhead. The couplings seem to preclude any possibility of the train breaking in two. Even if they should let go, the cars have two tremendous chains between them. The whole train also has about twice the normal amount of air-brake capacity, and each car is fitted with special automatic hand brakes.

After one has convinced himself that the cars are not likely to break loose, he begins to wonder how in the world the locomotive lifts the train up a grade of 7 feet in every 100 ft. Most of our states now have maximum grades of 6 per cent in their highways, for example.

At the first stop we had a look at the locomotive. At every stop after that we had another look, and at the top, where we stopped for some time, we went over it thoroughly. It was some locomotive! The main frame carries both the boiler and the tender. Water tanks are placed on both sides of the boiler and in the tender, making a saddle tank arrangement about like the Lackawanna uses. There are eight drivers under the forward end and a separate set of six drivers under the rear end. Each set of drivers has a separate pair of cylinders and is driven by side rods.

In connection with each set of drive rods is a set of three gears, which mesh in three toothed racks between the rails. These gears thus enable a locomotive to crawl up the steep grades without relying on rail friction traction. An ordinary



The Beginning of the Steep Climb. To the Left and Above the Left-Hand Chimney on the House May Be Seen the Cut in Which the Line Goes Along That Side of the Mountain

side-rod locomotive, would, in fact, be helpless on such grades.

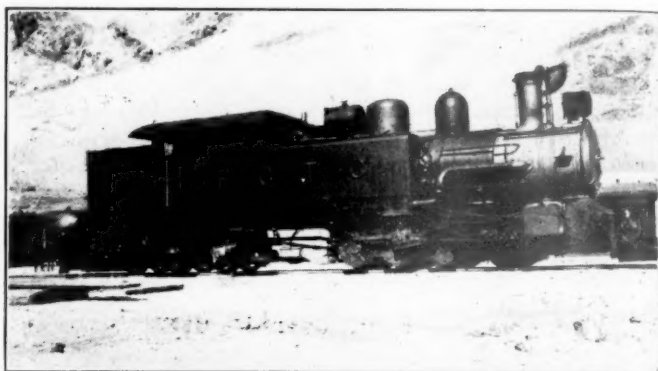
From the beginning of the heavy grades the insecure formations on the surface of the steep slopes of the mountain sides was very noticeable. In many places the surface appeared as the slopes of great newly-made earth dumps which had not settled. In other places there were great, loose, gravelly beds with surface slopes apparently far too steep to be stable.

The Bad Winters

The railroad grade had to be cut through these unstable formations. Since the snowfall is heavy every winter, and

during some winters is of tremendous depths, the line is subjected to serious slides at many points. The track also is blocked by snow for from a few weeks to four or five months each year. In the winter of 1919 the line was closed by slides and drifts from May to December. When we crossed on May 15, 1920, there had been practically no snow and no slides. The appearances were that the line would probably not be blocked before late June.

Casual observation leads to the conclusion that comparatively little could be done to stop the slides which cause so much damage to the line. Footings for concrete or masonry walls could not be found where most of these slides occur.



The Locomotive with Two Engines, Which Pulls the Train Over the Steep Grades on the West Side of the Mountains. Each Set of Drivers Carries a Set of Gears Which Mesh in a Triple Rack

Even if walls were built, they would be pushed out like sand before a torrent of water. Blockades due to snow could certainly be reduced by building more snow sheds. The length of sheds already built is negligible. Timber and lumber are so expensive in the vicinity that the cost of sheds would apparently not be justified by the traffic over the line. Without studying the topography closely it appears that a long tunnel would eliminate most of the slides and much of the trouble from snow. But the earnings of the line could hardly be expected to justify the great investment necessary to build such a tunnel. Travelers and shippers will thus apparently have to use the line when it is open.

When the line is closed, many travelers cross the mountains on mule-back. A broad trail on fairly good grade generally parallels the railroad. The time taken by journey depends on conditions. When one goes through in a train in fair weather he is greatly tempted to try the mule-back trip in order to have a real look at some wonderful scenery. Men who have been over when the snow is deep relate some desperate experiences.

At the Summit

Near the summit the train stopped a few minutes at a lake probably half a mile long by a quarter of a mile wide. This body of water, the Lake of the Incas, is at an elevation of nearly 10,000 ft. It is in among a lot of great towering sharp rock peaks that were all more or less covered with snow when we were there. With the sun shining on the whole landscape the lake looked like an immense vivid emerald rimmed around with a gigantic setting of frosted rock points.

At the summit we came to the boundary between Chile and the Argentine, and to the Argentine customs police. For the first time since we left home our passports and credentials were examined. It was no perfunctory examination either. We found that the Argentine officials really do a job of the enforcement of their unusually rigid laws regarding immigration and entrance into their country.

After leaving the summit on the descent into the Argentine, the character of the country changes rapidly. The eastern slope of the Andes is much less abrupt and rugged than the western slope. The railroad grade ranges from 1 per cent to 2.5 per cent and the curvature is neither unusually sharp nor excessive. On the trip down the scenery is, in fact, not greatly different from much of what one sees in some of the more mountainous parts of New Mexico, Arizona and the western part of Colorado. We arrived at the Argentine end of the line at Mendoza at 8 p. m., 13 hours after we started.

In Argentina

Upon arrival in Buenos Aires, Mr. Henry expressed a few of his impressions of Argentine railways in a letter to the editor of the *Railway Age*, in which he said in part:

"The Argentine Railways make a wonderfully favorable impression. As you are aware, they are practically all owned by English capital. British standards of construction, maintenance, rolling stock and operation are universal. There are quite a lot of American cars and a few American locomotives, however. These are reported to be giving uniformly good service, in spite of the general prejudice against anything American on the part of the operating officials.



A Stop Near the Summit of the Mountains

The future market for American rolling stock in the Argentine seems certain to be limited almost entirely to the few State railroads.

"Due to restrictions for the last five and a half years on the use of English capital outside of the British Empire, track maintenance and repairs to rolling stock have been only enough to keep the lines in service. At present the track work is in fairly good shape. Rolling stock, and especially freight cars, are generally in bad condition. No new rolling stock has been provided for several years, and practically no new main-line track has been built. As a result the roads have not kept pace with the rapid development of the country. In fact, lack of transportation is seriously hampering many well developed agricultural sections and various industries.

"This all sounds familiar at home. Down here the people have become quite exercised over the situation. 'British rail monopoly' and 'Foreign Restriction of National Development' or expressions to that effect frequently are heard. The British do however, deserve great credit from the Argentine for what they have done in this country. Not only have they pioneered in the railways, but they have shown great enterprise and ability in many other lines. In spite of all this, there appears to be a growing local sentiment in favor of capital from other nations in these great works which so seriously affect the nation's future.

"While American capitalists at present scarcely could even consider investments in railways or other industries in this country, on account of the demand for money at home, conditions may change sooner than seems possible now.

Meanwhile private wealth in this country is growing very rapidly. Before many years much capital for large projects can be raised locally."

New Embargo Regulations

WASHINGTON, D. C.

THE CAR SERVICE DIVISION of the American Railway Association has issued Circular CSD-87 (Cancelling Circular CCS-5 of March 5, 1920) prescribing new regulations which will govern the handling of embargoes, effective October 15 as follows:

Circular CSD-87

1. GENERAL INSTRUCTIONS

A. The Car Service Division will supervise the distribution of embargo notices between railroads. For this purpose the United States and Canada have been divided into 10 embargo districts, and each railroad has been assigned to one district. Each district is under the supervision of a district chairman, who will be responsible to the Car Service Division for the proper handling and prompt transmission of embargo information.

B. Each railroad will designate an officer who will issue and receive embargoes. His name, title and address must be filed with the district chairman and the Car Service Division and published in the Official Railway Equipment Register.

C. Each railroad may issue, as necessary, embargoes applying to traffic originating on or routed to or via its line.

D. The designated embargo officer should carefully analyze conditions before embargoes are placed in order to avoid issuance and distribution throughout the country of embargoes of a trivial nature; or covering purely local conditions which can and should be corrected without the use of the embargo; or the issuance of embargoes to relieve a consignee or to relieve the railroad of responsibility for the correction of abnormal conditions.

E. Advantage should be taken of Service Order No. 1, issued by the Interstate Commerce Commission under date of May 20, 1920, to avoid when possible the necessity for issuing embargoes.

F. The advisability of a permit system should be given consideration to avoid when possible a complete embargo.

G. A road placing, modifying, extending or cancelling an embargo will immediately transmit a copy of such embargo, modification, extension or cancellation to:

1. The Car Service Division.
2. The Embargo Chairman of the District to which such road is assigned.

3. The designated embargo officer of direct connections involved in the embargo, except short line connections assigned to another road or where inapplicable.

4. Local agents and other representatives of the embargoing line.

5. Its assigned short lines as indicated by Appendix "C," except where the embargo is manifestly inapplicable.

H. The district chairman will immediately transmit all embargo notices received from railroads in his district to:

1. All railroads in his district, except immediate connections of the issuing road, roads shown in Appendix "C," and where the embargo is manifestly inapplicable.

2. All other district chairmen, except where the embargo is manifestly inapplicable.

3. All local committees on car service in his district.

All embargo notices received from other district chairmen will be immediately transmitted to:

1. All railroads in his district, except where the embargo is manifestly inapplicable, and roads shown in Appendix "C."

2. All local Committees on Car Service in his district.

I. Local embargoes applying only to traffic originating at and destined to points on the same railroad will not be reported to the district embargo chairman. However, copies of such embargoes should be furnished the Car Service Division and interested local committees on car service.

J. Embargoes and extensions of embargoes become effective 24 hours from 11:59 p. m. of the date of issue. Modifications and cancellations of embargoes become effective immediately upon receipt of notice, unless otherwise specified. Freight loaded and billed prior to the embargo becoming effective shall be accepted by the embargoing road.

K. Each railroad will distribute promptly all embargo notices received from the district chairman or their direct connections to:

1. Its local agents and other representatives.
2. Short line or terminal connections assigned to it for embargo purposes as shown in Appendix "C."

L. To attain prompt and effective application of embargoes, it is suggested that each railroad divide its line into one or more local districts under the general supervision of the designated

embargo officer, with a local chairman over each district whose duty shall be:

1. To maintain a complete and accurate file of embargoes in effect on all railroads.
2. To be responsible for preventing the loading of freight in his district contrary to embargoes.
3. To inform local agents in his district whether or not freight can be accepted for shipment.
4. To inform shippers in his district concerning the status of embargoes on all roads.
5. To keep the designated embargo officer informed as to local conditions affecting the placement or release of embargoes.

Each important freight-loading station should be a district by itself; all smaller stations to be grouped as may be convenient, and the agent held responsible for consulting his local district chairman in cases of doubt before accepting freight. Quick methods of communication should be provided, and this factor should be considered in forming the local districts.

II. APPLICATION

A. The embargo is a means for stopping the loading of freight to a destination or via a route where conditions temporarily prevent the handling of such traffic. It is not a remedy for conditions of a permanent or indefinite nature, where relief should be obtained through tariff regulations, freight classifications, operating rules, etc. For illustration, it is not proper to issue an embargo to prevent the acceptance of:

1. Freight via circuitous or unfavorable routes.
2. Freight in certain classes of cars, such as automobiles in open cars; or during winter months, bulk material in open cars and perishable freight in common box cars.
3. Freight for lines or stations that have been permanently abandoned (except as a temporary emergency measure.)
4. Cars loaded in excess of a specified weight.
5. Freight on other than specified days, or for movement in a specified class of service.
6. Freight not loaded or crated in accordance with specified rules, or when loaded in certain containers.
7. Freight on which charges are not prepaid or guaranteed; refused freight returned to shippers; or freight billed in violation of rules in connection with "order notify" shipments.
8. Less carload freight for handling at specified transfer stations unless the territory affected is definitely described, either by naming specific destination stations affected, or by naming the initial and terminal stations when intermediate points are included.

When necessary to place an embargo on less carload freight for rehandling at a specified transfer station because of accumulation, the embargoing road will be required to furnish revised loading instructions, under which freight not subject to the embargo may be forwarded.

9. Less carload freight when cars contain less than a stated minimum for one destination.

B. Embargo should not be issued at the request of a consignee.

C. When temporary restrictions (so-called "holdback orders") placed account of local congestion or disability, and not intended to stop the loading of freight, cannot be removed within forty-eight hours, immediate action should be taken to cover by regular embargo. When such action is not taken roads adversely affected should report the facts to the Car Service Division and to the local committee on car service where such committee has been established.

D. That embargoes may not be continued longer than necessary each railroad should carefully review, at least once a week, all embargoes of its issue in effect, and modifications or cancellations should be issued as quickly as conditions justify.

III. SUPERVISION

A. The applications of embargoes will be policed locally by each railroad through its designated embargo officer.

B. The committee on car service at the various terminals acting under authority of the Car Service Division and in conjunction with the local committee of traffic officers, will observe the operation of embargoes of any road that affect business moving to or through the terminal district over which such committee has jurisdiction. It will be the duty of such car service and traffic committees:

1. To report to the railroad concerned when in their opinion an embargo placed by such railroad is no longer necessary or should be modified.
2. To recommend to the interested railroads when in their opinion a local condition justifies the placement of an embargo.
3. To recommend to the interested railroads the placement of embargoes against a certain railroad or on traffic through certain gateways when by reason of embargoes placed by other roads, or because of congestion on other lines, an undue amount of traffic is being diverted and likely to cause congestion. In

such cases the advisability of a permit system, to avoid where possible a complete embargo, should be considered.

4. To recommend to the interested railroads the formation of neutral committees or traffic control managers to regulate by permit or otherwise the movement of traffic into or through their respective districts when necessary to avoid congestion.

5. To recommend to local committees at other terminals the diversion or regulation of the movement from such territory when necessary to avoid embargoes or other restrictions.

6. To report to the Car Service Division action taken and results obtained in connection with the foregoing.

IV. CONSTRUCTION

A. Great care must be taken in the preparation and wording of embargoes to avoid any possibility of confusion or misunderstanding. Superfluous words should be avoided, and commodities designated in the terms employed in the freight classifications.

B. When practicable, not more than one subject should be included in an embargo. When an embargo is issued to cover specific classes of freight, each kind must be fully described. In laying a general embargo, exceptions thereto must be carefully specified. Points at which shipments originate should be shown, where possible to obtain such information. When placing a general embargo on points within a switching district, all individual stations affected must be named.

V. DISTRIBUTION

A. Embargoes will be transmitted by the railroads to the Car Service Division and the district embargo chairman and by the district embargo chairman to the individual railroads, to other district embargo chairmen and to local car service committees by telegraph or telephone, except where service by messenger, railroad mail or United States mail will secure an expeditious delivery.

B. In transmitting embargoes the district chairman will make no change in the form of the embargo except where manifestly inaccurate or illegible. In the event of any change he will communicate with the originating line or district chairman from whom the notice was received.

C. Embargo transmitted by wire will be in the following form:

FORM OF EMBARGO

1. Number
2. Road placing embargo
3. Cause
4. Commodity.
5. Destination or territory affected

When necessary to apply an embargo to particular consignees, names should follow "Destination."

6. Exceptions to embargo

FORM OF SUPPLEMENT

1. Supplement Number
2. Railroad placing
3. Embargo number
4. Item number (if any)
5. Brief identification of embargo
6. "Extend" or "Modify"
7. (When a modification) "To allow to come forward" (When an extension) "To include"
8. Or state the change

D. Embargoes transmitted by telegraph or telephone, either from railroads or from the District Embargo Chairmen, must, immediately be confirmed by mail. Such confirmation shall give the embargo information in the following form:

EAST & WEST RAILROAD

| Em-bargo No. | Origin-ating railroad | Commodity | Des-tination, gateway or territory | Con-signee | Excep-tion | Cause |
|--------------|-----------------------|-------------|------------------------------------|------------|------------|--------------|
| 15 | E & W | All freight | All | All | None | Accumulation |
| 16 | E & W | Coal | Plank | All | RR fuel | Accumulation |

E. On the 20th of each month all railroads will revise and transmit by mail to the Car Service Division and to their district embargo chairmen a complete statement of all embargoes in effect as of that date. Such statement will be prepared in the form specified in the preceding paragraph.

A COAL SHORTAGE menaces the world, and only the United States and Great Britain are assured of sufficient fuel to operate their industries at capacity during the coming winter, according to an article in the October issue of Commerce Monthly, magazine of the National Bank of Commerce in New York.

Maintenance Painters Promote Improved Practices

Convention at Detroit Considers Permanent Employment, Safety and Economical Use of Tools

THE PROGRAM of the seventeenth annual convention of the Maintenance of Way Master Painters' Association which was held at the Fort Shelby hotel, Detroit, Mich., on October 5-7, inclusive, was unusually well balanced. This would seem to indicate that the members of this organization, while essentially of the foreman and general foreman rather than of the supervisor class, are keenly alive to the fact that increased efficiency in their work can be obtained only by improvement in all phases of their work. Thus the subjects discussed at this meeting may be divided into four heads: Labor and supervision, covering such matters as permanent employment, maintenance and operation of camp outfits and inter-department co-operation; tools and equipment, covering the manner of their economical use and operation, the results obtained with the paint sprayer and the use of the motor car; paint technology, including the frosting of glass, painting of iron and steel structures, interior finishing and fire retardant coatings; and the subject of safety covered in an address by P. Groome, safety agent of the Union Pacific, and a discussion of proper and improper practice in the construction and use of ladders and scaffolds.

From the nature of the personnel of this association and the size of the meetings, the average number present being about 30, the method of procedure naturally assumed the form of roundtable discussions in which all of those present took part. In most cases these discussions were introduced by a paper prepared by an individual member, rather than by a committee, owing to the limited opportunities afforded for committee meetings.

The officers of this association during the past year were: President, H. F. Jones, master painter, Cleveland, Cincinnati, Chicago & St. Louis, Wabash, Ind.; first vice-president, H. B. Wilson, master painter, Bessemer & Lake Erie, Greenville, Pa.; second vice-president, B. E. Darrow, master painter, Atchison, Topeka & Santa Fe, Kansas City, Mo.; secretary-treasurer, E. E. Martin, master painter, Union Pacific, Kansas City, Mo. The secretary-treasurer's report showed a membership of 91.

Employment of Men the Year Round

One of the matters most actively discussed before the convention was the feasibility of keeping gangs employed the year round as a means of attracting a more efficient type of workmen. Most of those who spoke on this subject testified to reductions of force of from 25 to 40 per cent during the winter months which, under present circumstances, afforded them a means of eliminating the less efficient men or those who while able to do rough, outside work were not suited to doing the interior finishing commonly held over for the winter months.

Many agreed that the men whom it was possible to employ for the summer months only are far less efficient than those that were retained on the force the year round.

Another point developed in the discussion was that a number of those present preferred to do outside painting on all except metal structures in the winter rather than in the hottest summer weather. A question was also raised as to the efficiency of the men in cold weather as compared with summer on account of the time that would be occupied in going indoors to get warm. This was answered by several with the statement that men did as much work in dry, cold weather as in summer, although the opinion on this was not unanimous.

Operation of Camp Cars

Various members described the systems followed on their roads for housing and feeding the men, which disclosed a wide variation in the manner of handling this necessary feature of the employment of a gang on road work. The principal methods employed were described as follows: (1) The railroad supplies the cook, the car and the equipment, the cook being carried either on straight salary or with additional compensation for increased size of gangs and the cost of the food being prorated among the men according to the number of meals served. (2) The men are fed by contract which in the case of the small gangs such as are employed in maintenance of way painting is most easily arranged for by the employment of a man and wife, the former as a member of the crew and the latter as the cook, the men being charged a fixed amount for each meal. (3) The men boarding themselves and doing their own cooking, the selection of the cook being determined by rotation or, more often, by the natural selection of the man best adapted to do this work; railway regulations usually requiring that all cooking be done outside of the regular working hours.

From the testimony presented by the various men members, it developed that meals served by contract ordinarily cost the men from 40 to 50 cents, whereas meals served on the co-operative basis with the cook furnished by the company or recruited from the gang, costs from 22 to 30 cents each. The general testimony indicated that the co-operative plan was the most favored by the men and that the necessity for employing a cook depended upon the size of the gang.

A Review of Bridge Painting

Charles E. Fowler, consulting engineer, New York City, presented some general observations on the subject of metal bridge painting, based on his experience over a period of 33 years. Knowledge on the painting of bridges developed with the advancement of bridge engineering. The introduction of structural steel introduced new problems because of the far greater tendency of steel to corrode. The presence of a mill scale which tends to flake off after a period of service is one of the difficulties encountered in steel bridges, which no doubt is the reason why many English specifications provide for the erection of the bridge without any paint coating until the scale has an opportunity to come off.

Mr. Fowler also discussed the cleaning of old paint surfaces for repainting and favored the sand blast. This was used on the Niagara Gorge arch, using a local sand that had sufficient grit in it to be effective. Difficulty was encountered in having the painters do this work so it was finally turned over to the bridge erecting forces. This work cost about one cent per sq. ft. or about double the cost of ordinary scraping and wire brushing. In his opinion it is unnecessary to remove all the old paint if portions of it are still in good condition. As an illustration of the selection of protective coatings for the purposes for which they are best suited, the speaker said that 12 kinds of coverings were used in the recent reconstruction of the arch bridge.

R. L. Hallet, of the National Lead Company, New York City, explained the theory of interior flat coating. Surface finishes are glossy or flat depending on whether they reflect light direct or diffuse it. Diffusion takes place when the surface is slightly rough so that the light striking at a given point is reflected at many angles. In paint, the rough surface is obtained by using a relatively large amount of pigment

and a large proportion of volatile vehicle so that when the latter evaporates there is not enough of the non-volatile vehicle left for the pigment to be entirely submerged in it. Consequently, the pigment particles project in an irregular manner, producing the roughened effect.

A particularly valuable paper from the standpoint of the paint foreman and his men was a detailed discussion of the proper methods pursued in the care of maintenance of painters' equipment and tools, by C. K. Collenberg, master painter, Union Pacific, Cheyenne, Wyo. This was devoted primarily to the proper handling and storage of painters' ropes and hand lines and to the method of breaking in and cleaning paint brushes.

A short paper was presented by C. B. Lyons, De Vilbiss Manufacturing Company, Toledo, Ohio, on the methods, use and results secured with modern paint spraying machines, attention being directed primarily to such information as is required by the painter in the actual operation of machines. This talk was illustrated by lantern slides.

Dr. D. Louis Ireton, chairman of the International Trade Development Committee, New York City, presented a plea for the extension of trade school education. It was his contention that owing to the disproportionate amount of public money being spent on high schools and colleges, the great mass of children who are unable to avail themselves of higher education are being neglected or educated along impractical lines. The great need, he stated, is for utilitarian education that will teach trades in their entirety.

The officers elected for the ensuing year are: President, H. F. Jones (re-elected); first vice-president, P. E. Darrow, master painter, Atchison, Topeka & Santa Fe, Kansas City, Mo.; second vice-president, H. F. Bird, master painter, Philadelphia & Reading, Philadelphia, Pa.; secretary-treasurer, E. E. Martin (re-elected) Buffalo, N. Y., was selected as the place for the holding of the next convention on October 4-6, inclusive, 1921.

The Railway Supply Men's Association composed of representatives of the Carter White Lead Company, Chicago; Detroit Graphite Company, Detroit, Mich.; De Vilbiss Manufacturing Company, Toledo, Ohio; John Lucas Company, Chicago; Patton Paint Company, Milwaukee; Sherwin-Williams Company, Cleveland, Ohio, and the Wolf Brush Company, Pittsburgh, presented an informal display of catalogues and other descriptive literature, samples of paint coatings and paint materials in the convention room. On Thursday evening, the welfare committee of this organization entertained the members of the Master Painters' Association and their families at an informal dinner at the Fort Shelby hotel. Other features of the meeting consisted of a trip through the Ford Motor Works on Wednesday afternoon and a theatre party on Wednesday evening.

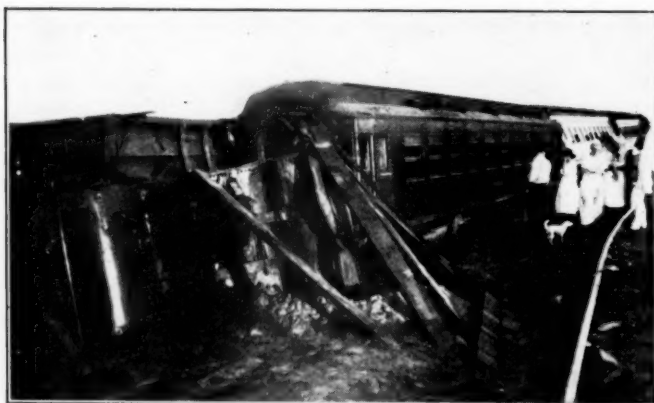


Photo by International

Governor Cox's Campaign Special After It Was Derailed at Peoria, Ariz., Recently

Meeting of the National Industrial Traffic League

THE NATIONAL INDUSTRIAL TRAFFIC LEAGUE held a special meeting at Louisville, Ky., from September 30 to October 1, at which several questions were taken up, all of which will serve to focus the attention of traffic men on the annual meeting which will be held in New York on November 18 and 19.

The issue raised by the talk of the bribery of railroad employees was recognized by the League in the following resolution, prepared by special committee, which was adopted:

"Whereas, It has been reported that, in certain quarters, shippers are paying and railroad employees are demanding and accepting payment for service in furnishing, moving and handling empty and loaded cars, and while this is exceedingly difficult of proof, it appears from information received, but there is a large measure of truth in these reports; therefore, be it

"Resolved, That the National Industrial Traffic League go on record as absolutely opposed to and vigorously condemn any such practice, further urging its members, in the interests of clean business and its law-abiding policy, to furnish to the executive secretary any information of reliable character that may be obtained, besides using their individual efforts everywhere to put a stop to this reprehensible practice."

The question of recommending increased demurrage charges, the study of which was delegated to a sub-committee by the executive committee, resulted in a lively discussion between these two committees. The sub-committee, after conferences with railroad officers, recommended an increase in demurrage charges of from \$2 and \$5, to \$3, \$6 and \$10. The executive committee voted to reject the report of its sub-committee. However, when the issue was brought up for general discussion on the floor, the action of the executive committee was rescinded after a lengthy discussion.

The report of the executive committee also contained the information that there had been some investigation of reports that the railroads proposed to discontinue the agency plans of publishing consolidated tariffs, but that such action seemed improbable. The matter of the restoration of mileage scrip books in effect prior to the war was referred to a special committee. It was not deemed advisable by the executive committee to take action with respect to the proposal to eliminate or modify the 3 per cent war tax on freight charges. As to the war tax on demurrage charges, the executive committee presented the controversy as to just how it should be applied and reported that efforts to have the present government ruling modified had been unsuccessful.

Among the topics discussed or reported upon at this meeting were the following: Embargo regulations, claims against the Adams Express Company, charges for trap or ferry cars, car movement figures, side track agreements, the continuation of national boards of adjustment, proposed standardization of weights and measures, the permitting of railroad boat lines on the Great Lakes, shippers' load and count provisions in bills of lading, re-routing of traffic, allowances to industrial roads and plant facilities, diversion and reconsignment, highway transportation, uniform classification, rate construction and tariff, freight claims, freight handled in refrigerator or heater cars, and rate relationships.

Several of these topics were introduced by progress reports of the committees appointed to investigate and study them and with the exceptions already noted these reports were adopted after discussion. In addition the resolution of the executive committee opposing the National Board of Adjustments, was adopted.

In the discussions at various times opposition was expressed to the charge that freight cars are in the hands of the shippers 37 per cent of the time and a motion was adopted, requesting confirmation of this statement by the railroad officers who have frequently used it.

The meeting closed with a banquet which was addressed by Charles E. Cotterill, general counsel of the Southern Traffic League; Luther M. Walter, of Chicago; J. V. Norman, of Louisville; H. C. Barlow, of Chicago; and Lieut. Governor Ballard of Kentucky.

A. E. R. A. Discusses Heavy Electric Traction*

Advantages of the Various Types of Drives for Electric Locomotives Outlined by Committee

THREE SUBJECTS were assigned to the committee on heavy electric traction for report at the annual convention of the American Electric Railway Association. These subjects were as follows:

1. Recent developments and progress in design of motors and motor drives for heavy traction, both alternating current and direct current, with comparison of weight, space efficiency, etc.

2. Description and illustrations of recent types of electric locomotives since the report of 1916.

3. Electric switching engine in freight yards, comparison with steam. The work of the committee has consisted large-

to the rail should not be less than about five inches. This with a given driving wheel size, and with gear pitch determined by service requirements, limits the motor diameter and the gear diameter, and number of teeth. The least practical number of teeth on the pinions is determined by service and manufacturing considerations. It is clear that the power limitations are thus fixed by the size of the motor and the gear ratio. The locomotive speed is limited by the maximum safe armature speed.

Gear and Quill Drive

In order to reduce the track distress of heavy dead axle loading the quill drive with spring supports between the motor and the wheels has been successfully developed for passenger, light freight and switching service, the motor being mounted directly above the driving axle. (Fig. 2.) This mounting in addition to reducing the track distress, by the fact of higher center of gravity and spring borne motors, affords opportunity to use larger motors than could be applied to axle mounting. Thus, for example, the quill mounted motor on the N. Y., N. H. & H. locomotive 071 class, could not with proper gear reduction and permissible dead load on axle be applied to axle mounting where the motor shaft is in the same horizontal plane as the axle. The motor, being above the axle, is limited no longer by clearance to rail, but on the other hand, is limited in the space which it occupies

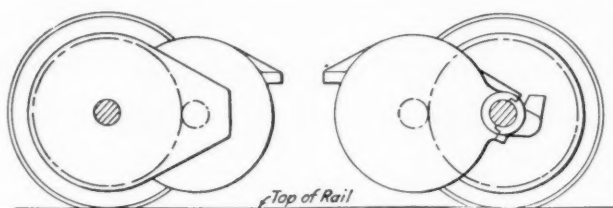


Fig. 1. Direct General Motor Drive

ly in collecting data; the questionnaires were sent to electrified steam railroads, to interurban railways and industrial concerns operating electric locomotives, and to users of multiple unit equipment, both in this country and abroad.

Solid and Flexible Gear Drives

In the simplest form of gear drive, which has practically become standardized for light switching locomotives and multiple unit equipment, the motors are mounted on the truck between the pairs of drivers, the motor shafts being in the same horizontal plane as the driving axles as shown in Fig. 1. Electric locomotives with this type of drive are in service

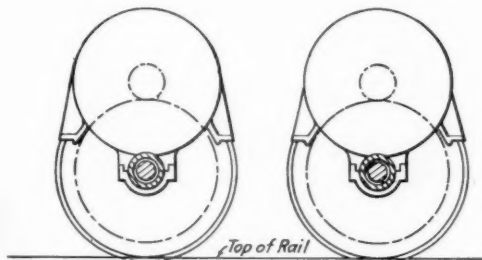


Fig. 2. Single Armature Gear and Quill Drive

both with rigid and with flexible gears, and with gears at one or both ends of the motor shaft. The so-called flexible gear is fitted with springs, the springs acting to absorb shocks. Such a flexible gear used in conjunction with a gear and side rod drive is shown in Fig. 8.

The major limitations that apply to this type of motor mounting are: 1. Gear reduction. 2. Necessary clearance about motor and gearing. 3. Maximum safe locomotive speed. 4. Permissible dead weight on the axle. The length of the motor is limited by the space between the backs of the drivers, less the space required for gear and gear case. The clearance from the bottom of the motor and gear cases

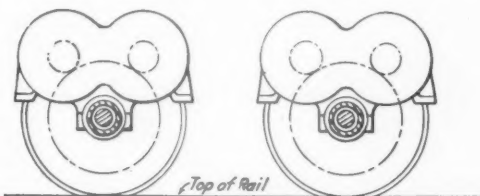


Fig. 3. Twin Armature Gear and Quill Drive

in the cab. Like the axle-mounted motor, it is limited in length, the same limitation applying. The motor may be limited in torque capacity by the amount which may be transmitted through the quill spring, and in speed by the velocity of the armature, spring parts, gearing, journals, or wheels. An example of quill spring is shown in Fig. 7.

In order to secure better weight efficiency, the single motor, quill-mounted, has given place to a twin motor, quill-mounted, the pinions on each armature meshing into a common gear. (See Fig. 3.) The armature of the single motor on the 071 class above referred to is thirty-nine inches in diameter, while the armature on the twin motor on the 073 class or the 0300 class N. Y., N. H. & H. is but 22 inches in diameter. The C., M. & St. P. 10300 class is also of this type. In the application of twin motors, because of smaller armature diameter, higher revolutions per minute are permitted; and this, being suitably geared, secures higher horse power rating per axle.

Side Rod Drive With and Without Gears

The side rod locomotive without gears as applied to the Pennsylvania Tunnel electrification in New York (Fig. 4) possesses the desirable feature of permitting axle loading similar to that of steam locomotive practice. This drive necessitates the use of a few large motors, and is economical as a design for high speed passenger locomotives. It is not, however,

*Abstract of the report of the Committee on Heavy Electric Traction, presented on October 11 at the annual convention of the American Electric Railway Association, held at Atlantic City, N. J.

economical for low speeds such as 15 to 20 m.p.h., because the revolutions of the driving wheels are, as in the case of the direct gearless motor drive, the same as those of the motor armature, and are too low for the most economical design of motor. Such design must make use of peripheral speed of approximately 8,500 ft. per minute maximum.

In order to secure greater economy in motor design, the geared side rod locomotive has been developed for heavy freight service. (See Fig. 5.) By the use of gears relatively higher armature revolutions are permitted. In this case the gears are in the same plane as the driving wheels which permits the utilization of the total distance between locomotive

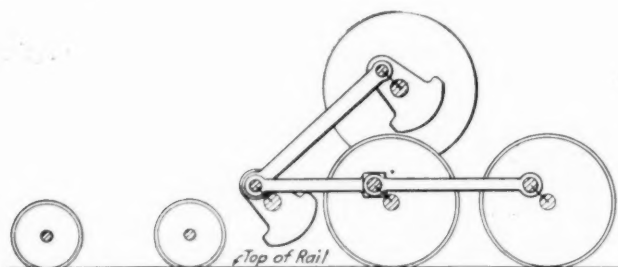


Fig. 4. Side-Rod Drive

side frame for the motor proper. Here it is possible within the limits of space available for the motor to make full use of the permissible rotor peripheral velocity. This type of locomotive makes it possible to drive two or three axles from a pair of motors. Examples of this are the N. & W. heavy freight locomotive and the P. R. R. locomotive of the FF-1 class (See Fig. 8).

Gearless Drive

Since 1906 the gearless motor has been successfully used for passenger locomotive service. The New York Central has applied this type of drive in the bipolar direct current motors with parallel pole faces, the armature, which is mounted directly on the axle (Fig. 6), being free to move vertically between the pole faces. The N. Y., N. H. & H. applied the direct drive with single phase commutator motors, flexibility being secured between the motor armature and driving wheels by means of quill springs installed in spring

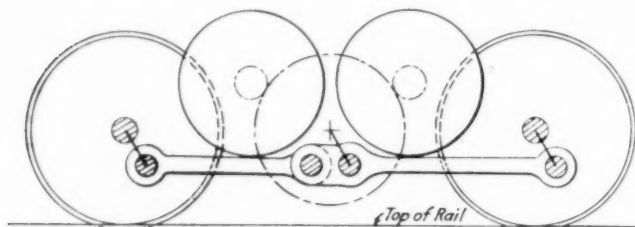


Fig. 5. Gear and Side-Rod Drive

pockets in the driving wheels. In 1919 the C., M. & St. P. applied gearless motors on the 10250 class for passenger service. Like the direct connected side rod locomotive this type is more economical in passenger service than in freight service.

Several stages mark the development of the single phase commutator motor for heavy traction service. The series commutator motor which embodies the use of resistance leads, connected between the commutator necks and copper coils, was the first to be successfully applied in this country. A number of difficult problems attached themselves to the use of these resistance leads. One was the securing of a metal that would withstand the localized stresses of expansion, contraction and vibration. These stresses caused the breaking of the resistance leads immediately at the commutator neck.

This has been quite effectively corrected in the later motors of this type of construction by the use of coils of Monel metal. Another problem, which involved a close study of the length and resistance of heat paths and size and location of ventilating ducts, was that of dissipating the heat generated in these resistance leads.

The driving motors used on the multiple unit cars on the Pennsylvania electrification at Philadelphia are single phase commutator motors without resistance leads. These are started as repulsion motors. The omission of the resistance leads produces an armature quite similar in its construction to a low voltage direct current armature. The necessary neutralizing of the injurious sparking voltage is secured by exciting the commutating winding in shunt with the main field and armature circuit. The omission of the resistance leads effects also a slight gain in weight efficiency and at the same time embodies improvement in the details of motor construction. The armature being without resistance leads permits of rugged construction. The necessary commutation characteristics are secured by the use of a commutating interpole winding. The armature reaction is neutralized, and hence the power factor is improved by the use of the auxiliary winding distributed across the pole face. Approximately 25

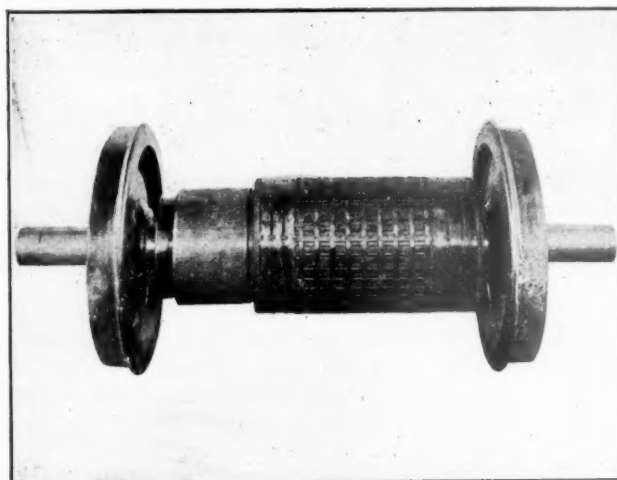


Fig. 6. Rigidly Supported Armature Used on the New York Central

per cent increase in weight efficiency has been secured in this motor over previous designs of single phase commutator motors.

Some features of interest may be noted in connection with the main driving motors on the FF-1 class locomotive for the P. R. R. These motors are of the 3-phase induction type with wound secondaries. The collectors are mounted on a shaft extension outside of the motor windings, which secures for both the collectors and the brush holders very ready means for inspection. The leads to the collectors pass through a portion of the rotor spider and axially through the shaft, and at the end of the shaft are connected by means of flexible copper connections to the collector rings. Such a design secures a maximum of active motor material between the side frames of the locomotives.

The development of the 3000 volt direct current locomotives for the C., M. & St. P. has carried with it every important development in the designs of direct current motors, particularly in its application to this high voltage. The insulation has been very closely studied and important progress marks its use. The motors are normally operated four in series under maximum speed conditions, the voltage across each armature being thus seven hundred and fifty.

As stated above, the committee has issued questionnaires

requesting construction and operating data to a large number of operating companies. The returns from these questionnaires have been extremely slow in coming in, and it has therefore been decided not to publish a comprehensive table this year but to include in the report only the data regarding

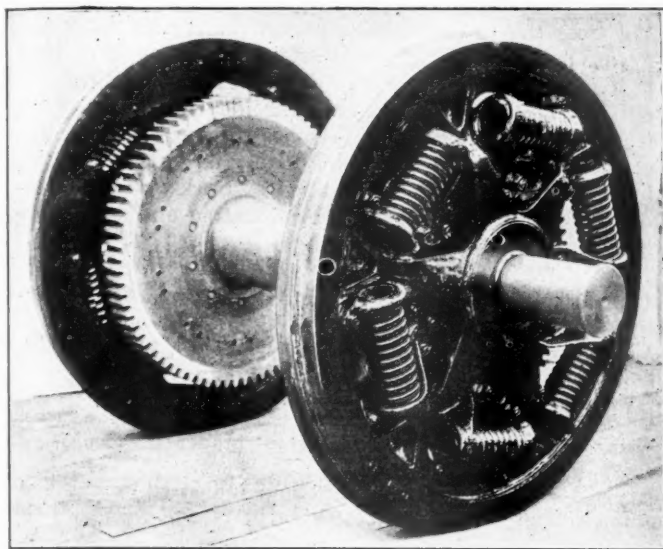


Fig. 7. Quill Drive with Gear

the more important types of locomotives which have been placed in service since the report of 1915. In the meanwhile, the collection of data is being continued and will be compiled at a later date, including American and foreign electric loco-

motives for main line, interurban, and industrial railroads; and multiple unit equipment.

Description of Locomotives Built Recently

It is realized that in including electrically operated industrial railroads, and multiple unit equipment, the committee has to a certain extent left the field of "heavy electric traction" but the line of demarkation is at best vague, and it is the thought that the addition of this data is justified. In order to keep within reasonable limits, only the industrial locomotives which have at least four driving axles are considered.

Electric Switching Costs

It is extremely difficult to obtain exact data on electric switching costs, as electric operation usually is so mixed with steam operation and other complications that it is usually impossible to separate costs satisfactorily. With one or two exceptions also the aggregate amount of switching is so small that adequate cost figures are impossible.

However, in a few instances, where a considerable amount of electric switching (both passenger and freight) is done, some of the economies and advantages are obvious. Three electric switchers accomplish easily the work of five or even six steam switchers. No relay engine is required, and there is no time lost in coaling, watering, cleaning fires, etc., as is the case with steam power. The electric switcher, therefore, operates twenty-four hours a day, seven days a week, without interruption, between inspections. The yard tracks are thus more intensively used, the yard capacity is noticeably increased, and the labor cost reduced as compared with steam operation. The cost of maintaining electric locomotives is also very much less than is the case with steam, and the ratio

DATA ON RECENT ELECTRIC LOCOMOTIVES FOR HEAVY TRACTION

| Railroad | New York Central | Penn. R. R. | N. Y., N. H. & H. | | Boston & Maine | Chicago, Milwaukee & St. Paul | |
|--|------------------|-----------------------|---------------------|-----------------------|----------------|-------------------------------|--------------|
| Series No. | T2-B | FF1 | 068 | 0300-0304 | 5005-5006 | 10250-10254 | 10300-10309 |
| Number in service | 10 | 1 | 1 | 5 | 2 | 5 | 10 |
| Year placed in service | 1917-18 | 1917 | 1916 | 1919 | 1917 | 1920 | 1920 |
| Class of service | Pass. | Frt. | Frt. & Swg. | Pass. | Pass. & frt. | Pass. | Pass. |
| System of traction | D. C. | A. C. | A. C. | A. C.-D. C. | A. C. | D. C. | D. C. |
| Contact conductor { Voltage | 600 | 11,000 | 11,000 | 11,000-600 | 11,000 | 3,000 | 3,000 |
| Classification { Type | 3rd rail | Cat. | Cat. | Cat.-3rd rail | Cat. | Cat. | Cat. |
| Wheel order | 4-4-4-4 | 2-6-6-2 | 4-4-4-4 | 2-6-2+2-6-2 | 2-4-4-2 | 6-8-8-6 | 4-6-2-2-6-4 |
| Driving Wheels— | 00000000 | 00000000 | 00000000 | 00000000 | 000000 | 000000000000 | 000000000000 |
| Number | 16 | 12 | 8 | 12 | 8 | 24 | 12 |
| Diameter | 36" | 72" | 54" | 63" | 63" | 44" | 68" |
| Truck Wheels— | | | | | | | |
| Number | | 4 | 8 | 8 | 4 | 4 | 12 |
| Diameter | | 36" | 36" | 36" | 41" | 36" | 36" |
| Weights (lbs.)— | | | | | | | |
| Total | 268,000 | 516,000 | 291,000 | 346,000 | 261,800 | 530,000 | 550,000 |
| On drivers | 268,000 | 440,500 | 194,000 | 231,000 | 205,000 | 458,000 | 336,000 |
| Per driving axle | 33,500 | 73,416 | 48,500 | 38,500 | 51,250 | 38,166 | 56,000 |
| Mechanical parts | 177,000 | | | 187,500 | 141,800 | 295,000 | 351,000 |
| Electrical parts | 88,000 | | | 161,700 | 118,200 | 235,000 | 199,000 |
| Dimensions— | | | | | | | |
| Length over all | 56'-10" | 76'-6 1/4" | 62'-0" | 69'-0" | 48'-6 1/4" | 76'-0" | 88'-7" |
| Width over all | 10'-1 1/4" | 10'-1" | 10'-0" | 10'-1 1/4" | 10'-2 1/2" | 10'-0" | 10'-0" |
| Height, rail to highest point | 14'-7 7/8" | 15'-6" | 14'-4" | 14'-9 1/4" | 13'-9" | 16'-8" | 16'-7 3/4" |
| Wheel Base— | | | | | | | |
| Rigid | 5'-0" | 13'-4" | 10'-0" | 26'-9" | 7'-0" | 13'-11" | 16'-9" |
| Total | 46'-5" | 63'-11" | 54'-0" | 59'-6" | 38'-6" | 67'-0" | 79'-10" |
| Motors— | | | | | | | |
| Number | 8 | 4 | 4 | 12 | 4 | 12 | 6 |
| Type | G. E.-91-A | W.-451 | G. E. A-614 | W.-409 C-2 | W.-403-A | G. E.-100 | W.-348 |
| Horse power, forced vent. | 325 | 1,200 | 345 | | 375 | 270 | 700 |
| One-hour rating, natural vent. | | | | | | | |
| Method of drive | Direct | Geared and jack shaft | Geared and side rod | Geared | Geared | Direct | Geared |
| Gear ratio | | 21:106 | 35:71 | 27:87 | 22:91 | | 24:89 |
| Tractive Effort (lbs.)— | | | | | | | |
| 1-Hour rating, Forced vent. | 20,000 | 87,200 | 27,000 | 21,000 | 23,000 | 46,000 | 66,000 |
| 1-Hour rating, Natural vent. | | | | | | | |
| Cont. rating, Forced vent. | 14,000 | 73,000 | 22,200 | 14,500 | 20,500 | 42,000 | 49,000 |
| Cont. rating, Natural vent. | | | | | | | |
| Horsepower of Locomotive— | | | | | | | |
| 1-Hour rating, Forced vent. | 2,600 | 4,800 | 1,800 | 2,000 | 1,500 | 3,240 | 4,000 |
| 1-Hour rating, Natural vent. | | | | | | | |
| Cont. rating, Forced vent. | 2,000 | 4,000 | 1,650 | 1,700 | 1,337 | 3,050 | 3,200 |
| Cont. rating, Natural vent. | | | | | | | |
| Speed, M. P. H.— | | | | | | | |
| Hour rating | 49 | 20.6 | 23 | 36 | 20 | 26.4 | 22.7 |
| Maximum safe | 85 | 40 | | 70 | 30 | 65 | 65 |
| Is locomotive equipped for regeneration | No | Yes | No | No | No | Yes | Yes |
| Is locomotive equipped for multiple unit operation | Yes | No | No | No | Yes | Yes | Yes |
| Type of collector | 3d rail shoe | Pant. | Pant. | Pant. & 3rd rail shoe | Pant. | Pant. | Pant. |

of coal saved is greater than in either passenger or freight main line service.

The elimination of smoke is an especially important feature of electric switching operation, because the freight and passenger yards are often necessarily located in thickly populated sections, and the undesirable characteristics of continuous smoke production in a confined area are thus obviously intensified as compared with main line steam operation, where the smoke is discharged only intermittently, or during the passage of a train at any given point.

In passenger service, especially in the case of multiple unit equipment, the advantages of electric switching are more marked than in any other service, as no locomotive is required. At least one large railroad company has equipped all of its multiple unit cars with motors, even though each motor car has considerable trailer capacity, solely in order to obtain the benefits of this unit mobility in switching operations.

The committee has been impressed by the duplication and overlapping of the work of various committees of associations which are interested in heavy electric traction. Several committee reports have been issued this year, which are the result of a large amount of work and are of great value to

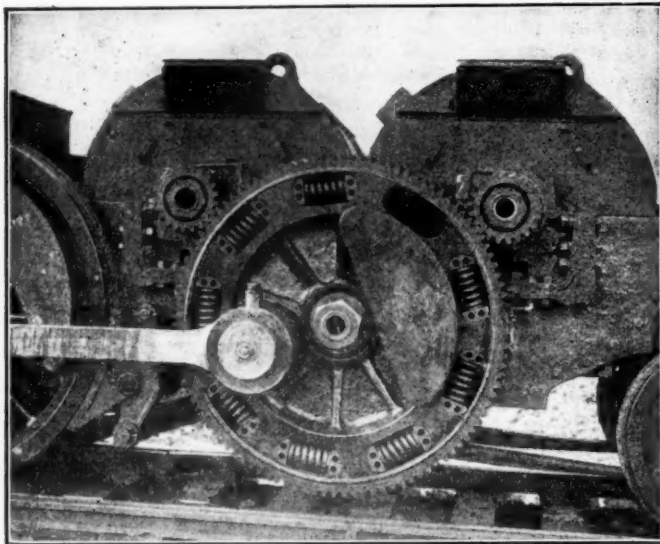


Fig. 8. Type of Flexible Gear and Side-Rod Drive Used on Pennsylvania FF1 Locomotive

the profession. Some of these reports, however, represent a very considerable amount of duplication, especially in connection with the collection of data descriptive of engineering and operation, and it has occurred to this committee that a species of "clearing house" would be appropriate at this time in order that, by co-ordinating the activities of the various engineering organizations which are working along the same lines, duplication of effort might be prevented.

It is recommended that an attempt be made by the American Electric Railway Engineering Association to interest other organizations; such as the American Railroad Association; American Railway Engineering Association; National Electric Light Association; American Institute of Electrical Engineers; American Society Mechanical Engineers; Railway Electrical Engineers, etc., in such committee co-operation, with a view to assigning subjects to the committees and sub-committees of the associations interested and securing minimum overlapping and consequently maximum efficiency. The reports of all the committees might be published as desired by each of the organizations so allied.

The report is signed by Sidney Withington, chairman, L. S. Wells, C. H. Quereau, J. H. Davis, J. C. Davidson, R. C. Taylor, R. Beeuwkes, A. M. Eaton and J. V. B. Duer.

Classifying Ties for Service Requirements

AS ONE STEP in a program for obtaining the maximum service from the ties used, the Philadelphia & Reading and affiliated lines have adopted a new system of classifying cross ties to insure their use in the service for which they are best suited. To this end instructions have been issued for two classifications of ties, one for accounting purposes and the other for service. The idea is to classify the ties in such a manner that the strongest tie will be placed in the track where it will be subjected to the largest relative mechanical wear. The classification of track and the corresponding classification of ties for accounting and service are given below:

Classification of Tracks

Class 1—Main tracks, frequent heavy tonnage with moderate speed.

Class 2—Main tracks, high passenger speed, mixed traffic, or equivalent.

Class 3—Main tracks of important branches, including third and fourth tracks and running tracks in important yards.

Class 4—Main tracks of unimportant branches and passing sidings of important branches.

Class 5—Station, storage, yard and industrial tracks and passing sidings on unimportant branches.

Accounting Classification of Ties

Group Ua—Black locust, white oaks, black walnut.

Group Ud—Chestnut.

Group Ta—Ashes, hickories, honey locust, red oaks.

Group Tb—"Sap" pines.

Group Tc—Beech, birches, cherry, gums, hard maples.

Group Td—Elms, hackberry, soft maples, spruces, sycamore, white walnut.

Each group has five grades, depending on size and whether hewed or sawed, these being stamped 1, 2, 3, 4 or 5.

Classification for Service

1. Ties shall be divided into two classes according to thickness, namely: 7 in. or 6 in. thick. Ties 7 in. thick shall include all ties 7 in. thick and having at least a 7-in. face. Six-inch ties shall include all ties having less dimensions than those classed as 7-in. ties. For instance: A tie 7 in. thick with 6-in. face would be classified as a 6-in. tie.

2. Ties shall be further subdivided into four service classifications as follows:

"H" (hardwood) shall include Groups Ua, Ta, Tc, Td.

"P" (pine) shall include those pine ties showing heart the entire length of one face—part of Group Tb.

"S" (sap) shall include those pine ties not included under "P"—part of Group Tb.

"C" (chestnut) shall include all chestnut ties, Group Ud.

All ties are to be treated except black walnut, black locust and chestnut.

One end of each tie is stamped at the creosoting plant to show the accounting classification and at the other end to show the year of treatment and the service classification. All ties are placed in tracks in accordance with the following track and service classification:

Tracks—Class 1 on curves, H-7 ties.

Tracks—Class 1 on tangent, P-7, 9-in. face.

Tracks—Class 2 on curves 2 deg. and under, P-7, 9-in. face, and on other curves H-7.

Tracks—Class 2, tangents, P-7, 9-in. face.

Tracks—Class 3 on curves 2 deg. and under, P-7, 9-in. face, and on other curves H-7.

Tracks—Class 3 on tangents, H-6 and P-7, 9-in. face.

Tracks—Class 4 on curves 2 deg. and under, P-7, 8-in. face, and on other curves H-6.

Tracks—Class 4 on tangents, C-7, C-6 and S-7, 9-in. face, and P-6 on sidings.

Tracks—Class 5 on curves, P-6 and S-7, 8-in. face.

Tracks—Class 5 on tangents, C-6, C-7, S-6, and S-7, 8-in. face.

More Priority Ordered for Coal Shipments

Service Orders Nos. 20 and 21, Issued by I. C. C. on October 8,
Intended to Assist Increased Production

WASHINGTON, D. C.

A DRIVE TO INCREASE the production of bituminous coal to about 12,000,000 tons a week has been undertaken by the railroads and coal operators, with the approval of and backed by the authority of the Interstate Commerce Commission. Orders giving an additional degree of priority to coal transportation, for the purpose of further increasing the production of coal by increasing the number of open-top cars available for coal shipments, were issued by the Interstate Commerce Commission on October 8, substantially in accordance with a program recommended to the commission after a conference of representatives of the railroads, the coal operators, public utilities and other consumers at a meeting in Washington earlier in the week, although some changes were made by the commission. The orders are intended particularly to provide an increased supply of coal for domestic consumers and others that have not been sufficiently provided for in the previous orders issued by the commission. Service Order No. 20, superseding Service Order No. 15, extends to the eastern boundary of Montana, Wyoming, Colorado and New Mexico, the territory in which the railroads are required to give preference to coal in the use of open top cars. Service Order No. 21, superseding Service Order No. 16, cancels the general preference given to public utilities and public institutions and substitutes a plan by which they will be given a preferential car supply after October 15 only as authorized by the commission in special cases on recommendations made by a committee representing the railroads, the coal operators and the utilities. The commission has also cancelled its permits which have been issued for the use of coal cars for the transportation of other commodities in special cases. It is believed that the program thus adopted will make it possible to increase the weekly production of bituminous coal from about 11,000,000 to 12,000,000 tons a week and to continue to carry out the program of 4,000 cars a week for transshipment across the lakes to the northwest while providing about 2,100 cars a day for domestic use in Ohio, Indiana, Michigan, eastern Kentucky, eastern Tennessee, western Pennsylvania and West Virginia.

The first service orders issued by the commission referred to an emergency existing "because of a shortage of equipment and congestion of traffic, aggravated by unfavorable labor conditions," and also because of "the inability of the carriers properly and completely to serve the public in the transportation of coal." Later orders omitted the reference to labor conditions, after most of the switchmen had returned from their "vacation," and Orders Nos. 20 and 21 omit the reference to the congestion of traffic, as the congestion has been practically cleared up for some time.

Service Order No. 20

Service Order No. 20 provides in part that the coal-loading carriers east of the eastern boundary of Montana, Wyoming, Colorado and New Mexico

Be directed, until the further order of the commission, to furnish such coal mines with open top cars suitable for the loading and transportation of coal (herein termed coal-cars) in preference to any other use, supply, movement, distribution, exchange, interchange or return of such coal cars; provided, that such coal cars may be used in service moving in the direction of the mine or mines to be supplied, on the return movement, after the discharge of the coal lading thereof, upon a route not materially out of line and to points not beyond such mine or mines; and provided further, that the phrase "coal cars" as used in this order shall not include or embrace flat bottom gondola

cars with sides less than 38 inches in height, inside measurement, or cars equipped with racks, or cars which, on June 19, 1920, had been definitely retired from service for the transportation of coal and stenciled or tagged for other service.

It is further ordered, That all common carriers by railroad within said territory other than coal-loading carriers (herein termed non-coal-loading carriers) be, and they are hereby, authorized and directed until the further order of the commission to deliver daily to a connecting coal loading carrier or carriers, empty or loaded coal cars up to the maximum ability of each such non-coal-loading carrier to make such deliveries, and of each such connecting coal-loading carrier to receive and use the coal cars so delivered for the preferential purposes herein set forth.

It is further ordered, That all such common carriers by railroad in said territory be directed forthwith, until the further order of the commission to discontinue the use of coal cars for the transportation of commodities otherwise than as hereinbefore specified (a) as to each coal-loading carrier, so long as any coal mine remains to be served by it with coal cars, and (b) as to each non-coal-loading carrier, so long as deliveries of any coal cars to connecting carriers may be due or remain to be performed under the terms of this order.

Service Order No. 21

Service Order No. 21 provides:

That effective October 15, 1920, and until further order of the commission, all common carriers by railroad within said territory to the extent that may be necessary in order that public utilities which directly serve the general public under a franchise therefor with street and interurban railways, electric power and light, gas, water and sewer works; also ice plants which directly supply the public generally with ice; also hospitals, schools, and other public institutions of the United States, state or municipal governments, may be kept supplied with coal for current use but not for storage, exchange, or sale, be, and they are hereby, to the extent that the commission or its agent or appointee thereunto duly authorized shall hereafter from time to time designate in individual cases, but not otherwise, authorized and directed to place, furnish and assign cars to coal mines for the transportation of such coal in addition to and without regard to the existing ratings and distributive shares for mines upon said railroad; provided, that such coal shall not be subject to reconsignment and that a written report of the cars placed hereunder shall be made to the Interstate Commerce Commission by the railroad placing the cars, as often as once each week.

Freer Distribution of Soft Coal Will Be Made Possible

"Through the operation of these two orders," says a statement by the National Coal Association, "a freer distribution of soft coal to householders, manufacturers and public utilities everywhere will be made possible, as an emergency measure. Both orders are intended to relieve shortages in coal supply until the program for supplying the winter wants of the Northwest, which was put into operation last July, is out of the way.

"At the conference of operators and railroad executives, early this week, it was agreed that the Northwestern schedule, which calls for a movement of 4,000 cars a day, or 1,200,000 tons of soft coal a week, up to the close of navigation, about December 1, to the Great Lakes for transshipment to Northwest points, must be rigidly carried out. At that conference the railroad executives promised that from now on they would provide the 4,000 cars a day for that movement. Under the orders a program will be put into effect providing for a movement of 2,000 cars a day for communities in Ohio, Indiana, Michigan, eastern Kentucky and eastern Tennessee, where the greatest shortages in immediate supply exist. Out of this allotment, Ohio will get each day approximately 800 cars, Michigan 500 and Indiana 200. This program was worked out by the operators and railroad executives after conferences

with representatives of public utilities commissions, distributors and retail dealers in the states involved. The increased movement of cars, which the railroads have already started, will provide sufficient coal for the immediate household needs in the states embracing the program, until the lake movement is over, after which ample coal will be at disposal for their winter storage needs."

Committee to Superintend

Distribution to Public Utilities

A voluntary committee consisting of W. L. Barnes, executive manager of the Car Service Division; John Callahan, traffic manager of the National Coal Association; and G. W. Elliott, secretary of the National Committee on Gas and Electric Service, is to superintend the distribution of soft coal to public utilities, and working in co-operation with the Interstate Commerce Commission, will endeavor to see that an even distribution of soft coal is made. It was brought out at the conference that while the railroads have made a remarkable record during the past few months in the transportation of coal, much of the complaint as to the shortage has arisen from the manner in which it has been distributed, which is a matter rather within the province of the coal operators than that of the railroads because outside of a certain amount of coal controlled by priority orders they have been free to ship where they desired. When complaints have arisen from communities that had been somewhat neglected in the distribution, they have invariably been met with demands for more cars. It was also brought out that the public utilities in some cases have been able to accumulate more coal than was actually needed for current use under the priority order issued for their benefit, which has now been withdrawn. Abuses are also said to have occurred because, under the extraordinary pressure brought to bear, so many permits had been issued allowing departures from the coal priority orders to allow the use of open-top cars for other commodities, and it is understood that hereafter permits will be issued only in cases of a very serious nature.

Mr. Willard conferred with Secretary Tumulty at the White House on October 7 regarding the coal transportation situation and it is understood that plans were discussed for obtaining the allocation of more vessels for the coastwise shipments of coal.

I. C. C. Issues Statement Explaining Situation

The commission also issued a statement explaining the general situation as to the transportation of coal and the reasons for its orders, and also pointing out the amount of the service performed by the railroads this year, as follows:

Bituminous coal production during 1918 exceeded consumption by approximately 30,000,000 tons. During 1919 the situation was otherwise; consumption exceeded production and there was a net draft on stocks of approximately 40,000,000 tons for that year. The year 1920 began with no substantial stocks, and the demand during this calendar year could be met only as bituminous coal could be produced. Moreover, production this year has been considerably retarded by strikes of coal miners, more particularly in the Indiana and Illinois fields, in the Thacker field and in the Birmingham district; and also by the switchmen's strike, which commenced in April, and by the dispersion of coal carrying equipment early in the year.

Soon after the termination of federal control it became necessary for the commission to adopt measures by which transportation for coal would be increased. This necessitated an increase in the number of cars available for transporting coal. By an order effective June 21, 1920, railroads east of the Mississippi river were required to furnish coal cars to coal mines in preference to any other use. Because of the abnormal demand for coal cars to transport iron and steel, road building and other building material, by a definition of what constituted a coal car, approximately 80,000 flat bottom gondola cars were subsequently excluded from the effect of that order. In addition numerous additional permits have been issued from time to time authorizing the use of coal cars for the transportation of other freight of an emergency character. The demand for coal cars for

other freight has been accentuated by the very large building program which is under way.

As the result of the order entered in June, there has been, a heavy production of bituminous coal, as is indicated by the following figures for the period from June 5 to September 25 of each of the years shown:

| 1917 | 1918 | 1919 | 1920 |
|-------------|-------------|-------------|-------------|
| 171,124,000 | 195,963,000 | 157,272,000 | 171,650,000 |

The average production for that period in the years 1917 to 1919 is 174,786,333. The production for the period in question during the current year exceeds the production during the same period for each of the years 1917 and 1919 and, despite various labor disturbances in different fields, approximates the average for the three years. Moreover, the bituminous coal produced up to September 25 this year exceeds that of the same period last year by more than 51,000,000 tons. The production of coal during August, 1920, has never heretofore been exceeded except during August, 1918, when an intensive campaign as a part of the war program was under way. As the demand of the government for coal for war purposes has dropped off, the amount of coal made available for American industry since the first of the service orders of the commission has been substantially equal to or above the average for recent years, despite strikes of miners and switchmen and the recent car congestion.

The increased production has been consumed in a large part by industries, by railroads and other public utilities, by the north-west and by New England, and by exportation. There has not been a sufficient production of the sizes of coal for domestic purposes to satisfy the present demands for such uses. Vigorous complaints have been received in behalf of the domestic users of coal in Indiana, Ohio and Michigan. Complaints have also been received from Oklahoma, Texas and other western states. It is imperative that the production of coal be even further increased. To accomplish this it will be necessary to increase the car supply for coal. As a means to such end, the commission has entered an order requiring all railroads east of the eastern boundary of the states of Montana, Wyoming, Colorado and New Mexico to furnish coal cars to coal mines in preference to any other use. The orders of this character heretofore issued have applied only east of the Mississippi river. The present order runs until the further order of the commission, and will be relaxed as soon as it appears practicable to do so. As a further means of accomplishing the object sought all outstanding permits for the use of coal cars for transporting other freight are cancelled, effective midnight October 10. Thereafter, until the domestic coal situation is well in hand, permits of this character will be issued only upon a showing of public interest. Arrangements will be made for the continuance of the movement of certain essentials, such as sugar beets to factories.

Plans have been worked out in conjunction with representatives of the coal operators and of the railroads by which it is expected the needs of the domestic consumers of coal will be substantially met. The program contemplates that approximately 2100 cars will be transported daily for domestic use in Indiana, Ohio, Michigan, eastern Kentucky, eastern Tennessee, western Pennsylvania, and West Virginia. Attention is also being given to the needs of domestic consumers in other states.

By Service Order 9, entered July 13, authorizing preference and priority in the car supply for transporting coal for the current needs of public utilities and public institutions those utilities and institutions have been kept going from day to day and generally have been able to accumulate some stocks of coal, and are in a much better condition with respect to coal than they were in July. For that reason and to avoid the inequalities in the distribution of cars at the mines which necessarily results from a priority order, a new order has been entered, which indicates that real emergency needs of public utilities and public institutions will be cared for in special cases. After October 14, a preferential car supply to meet such needs will be afforded by the railroads only upon approval by the commission.

Anthracite Coal

Although the railroads serving anthracite mines have furnished such mines close to a 100 per cent car supply, and although the anthracite production up to September 25 exceeds that of the same period last year, the production this year has been retarded by the recent coal miners' strike in the Pennsylvania anthracite mines, and by the switchmen's strike which commenced in April. There is a shortage of anthracite coal in some of the New England states due largely to embargoes placed by certain New England railroads in effect during a substantial part of the time between April and August 24. These embargoes have now been modified, and it is expected that the rail movement of anthracite coal to New England will proceed unhampered.

An idea of the relative quantity of freight transported during

the period June 26 to September 18 this year as compared with the same period for the years 1919 and 1918 can be had from the following figures: For that period during the current year the number of carloads of revenue freight were 11,008,184; during the same period for 1919 the number was 10,699,736 and during the same period for 1918 the number was 11,340,628.

During the first seven months of the year 1920 the number of net tons of revenue and non-revenue freight carried one mile by railroads having annual revenues exceeding \$1,000,000, which represent more than 95 per cent of all railroads were 248,999,000,000; for the corresponding periods in former years the net tons carried one mile were 212,706,000,000 for 1919; 247,519,000,000 for 1918; and 245,093,000,000 for 1917. It will thus be seen that the number of net tons carried one mile for the first seven months of 1920 exceeds the net tons carried one mile during a corresponding period in any of the past three years.

Interpretations of Service Order No. 18

Under the operation of Service Order No. 18, recently issued by the Interstate Commerce Commission, which restricts the assignment of cars for railroad fuel supply, a number of railroads have had great difficulty in securing enough coal and have been faced with the probable necessity for confiscating large quantities of coal. Inquiries have been made to the Interstate Commerce Commission as to important questions that have arisen as to the proper interpretation of the order because different carriers have interpreted it in different ways. Chairman Clark of the Interstate Commerce Commission has, therefore, addressed a letter to Daniel Willard, chairman of the advisory committee of the Association of Railway Executives, and also to the Car Service Division and the National Coal Association, communicating a series of interpretations of the order reached by Division 5 of the commission after careful consideration.

The letter explains that for the purpose of breaking up practices and interpretations being placed upon Rule 8 of the coal car distribution rules as amended by the commission's order of April 15, it added in Service Order No. 18, a proviso that railroads may not assign cars for company fuel and fail to count such cars against the mine's distributive share unless the entire output of the mine is taken by the carrier for a period of not less than six months. It was not intended, the letter says, to draw any distinction between contracts which extend over the period of time specified that were or may be entered into after the issuance of the order and prior to November 1, and similar contracts that were in effect at the time of the issuance of the order, which extended to March 31, 1921, or later. It is also stated that the possibilities under the former order were carried to the extreme in some instances and the assigned railroad fuel cars were given to a mine for its entire output for a day or for certain days and the mine was left on a commercial basis for succeeding or intervening days. This is described as an intermingling of the two ideas of taking a part of the output of the mine and counting against it the cars assigned to it for the railroad fuel and the other provision for taking the entire output of a mine.

The modification of this rule contained in Service Order No. 18 was for the purpose of stopping this practice and making it entirely clear that it could no longer be followed. Service Order No. 18 prohibited the assignment of cars and failure to count them against the distributive share of the mine for the day or the assignment of cars in excess of the mine's distributive share for the day, except where the entire output of the mine is taken for not less than six consecutive months. The proviso as to contracts made after the issuance of this order and prior to November 1 and extending to or beyond March 31, 1921, as well as for existing contracts continuing for the period specified, is to be considered in connection with this interpretation. In some instances, Chairman Clark said, contracts for the entire output are made with producing companies owning two or more mines and the custom has been to assign cars to some one of the mines on different days. The order is not intended to interfere with this practice where

carried out in good faith, but it must be confined to mines actually owned and operated by the producing firm or company with which the contract was made.

Where carriers have arranged for the purchase of coal on a tonnage basis instead of for a period of time, the commission thinks that such practice should be reduced prior to November 1 so as to cover the entire output.

The Transportation Act—An Important Reconstructive Measure

"THE TRANSPORTATION ACT of 1920 is one of the most important reconstructive measures that Congress has enacted. For the first time we have a clear and definite policy from Congress for railroad operation under private control." These remarks were included in the report of the Committee on Railroad Securities presented at the convention of the American Industrial Bankers' Association held at Boston, Mass., beginning October 4. The chairman of the committee was Allen B. Forbes, of Allen, Forbes & Co., investment bankers of New York, but the report was read by the vice-chairman of the committee, John E. Oldham, of Merrill, Oldham & Co., of Boston.

An abstract of the report follows:

In the past your committee on railroad securities has made a number of definite and concrete recommendations for the solution of the railroad problems, and it is of interest to examine the Transportation Act of 1920 to see to what extent their recommendations have been fulfilled. In the annual report of the committee on railroad securities, submitted and approved at the seventh annual convention, the members were in agreement on the following points:

First—The pre-war plan of railroad regulation was a demonstrated failure.

Second—The railroads should not be returned to their pre-war status without providing relief from the burdensome conditions under which they have heretofore operated.

Third—Any plan of future government control should eliminate the conflict of control between state and federal bodies.

Fourth—The Sherman anti-trust law and state anti-trust laws in their application to transportation should be repealed in the interests of efficiency and economy, because such laws are unnecessary under proper governmental regulation.

Fifth—Any plan of governmental control which increases operating expenses and regulates income should assume responsibility for adequate earnings and sustained credit.

Sixth—Opposed to public ownership or permanent public operation and emphatically in favor of an early return to private ownership under such altered methods of regulation as will insure sound railroad credit and an adequate transportation system.

It must be a source of gratification to the Investment Bankers' Association to know that in enacting the Transportation Act of 1920, the congress recognized the fundamental character of every one of the questions mentioned above.

The Transportation Act of 1920 recognizes that the pre-war plan of railroad regulation was a demonstrated failure, and a serious and earnest effort was made to provide relief from the burdensome restrictions under which the railroads had previously operated and to eliminate the conflict of control between state and federal bodies. The Sherman anti-trust law as affecting the railroad industry is nullified under the new railroad legislation and the fundamental principle is recognized that any plan of governmental control which regulates income should assume responsibility for adequate earnings and sustained credit. In addition the operation

of the railroads is definitely established under private ownership . . .

The Transportation Act of 1920 is one of the most important reconstructive measures that Congress has enacted. For the first time we have a clear and definite policy from Congress for railroad operation under private control. While definite progress has been made towards the solution of the railroad problem, it remains to be seen how the new legislation will work out in actual practice, and particularly, if under the new conditions the credit of the railroads will be sustained.

Hardly less than the act of Congress, the prompt and comprehensive action of the Interstate Commerce Commission is to be commended. That body has demonstrated its intention fully to carry out the provisions of the railroad act and do its part in the restoration of railroad credit.

This problem of the credit of the railroads is the question in which we, as bankers and large distributors of railroad securities, are vitally interested. The railroad problem has not been solved unless recognition is given to the need of corporations for sound credit and also for corporations to raise new capital both readily and economically. Moreover, in accordance with sound principles of finance, the credit of the railroads generally must be established on a basis of such soundness and security that they are able to provide a proper proportion of their capital requirements through the sale of capital stock as well as bonds.

Those railroads which have satisfactorily met their financial requirements since the enactment of the Transportation Act have been for the most part those which have had independently a credit which has made it possible.

A moment's reflection, however, shows the combined railroad service of the country is rendered by a combination of units, many of which are not in that happy position. The service they render, however, is vital to the country's needs. How shall railroad credit as a whole be sustained, and a general credit for railroad securities be created, which will make it possible to raise the urgently necessary funds to give the service which the country requires and demands?

The question cannot be fully and satisfactorily answered in a sentence, a paragraph or a report. Some modifications of the law may be found to be desirable, and if so, we feel that a helpful rather than critical attitude may be expected on the part of Congress and the Interstate Commerce Commission.

The logic of the situation unmistakably points towards consolidations where economies can be effected and the satisfactory handling of traffic promoted. While in the judgment of the committee the law has wisely made such consolidations permissive rather than compulsory, sound business judgment will perceive the business opportunities and can be relied on to bring about this logical solution of many of the problems involved.

A Correction

IN AN ARTICLE entitled "The Container System of Freight Transportation," appearing in the *Railway Age* of September 24, the statement was made that freight "can be handled at from 300 to 400 per cent less cost than with any of the present methods." This obviously is an impossible performance. The statement was intended to convey the idea that the cost of moving freight by means of the older methods—handling the individual packages—is from three to four times the cost of transporting the same amount of freight when using the container system.

THE NARRAGANSETT PIER RAILROAD, 8 miles long, now has a gasoline motor-driven passenger car.

Germany Exporting Locomotives

By Robert E. Thayer,

European Editor of the *Railway Age*

LONDON.

AMERICAN LOCOMOTIVE BUILDERS have been brought face to face with German competition in the loss of an order for 2-8-2 locomotives for the Java State Railways. The order was handled by the Dutch Colonial Office and out of an order for 82 locomotives 58 went to German builders and 24 to Dutch builders who will obtain much of the material for the construction of them from the Germans. The order includes 2-8-2, 4-6-2 and 2-4-2 locomotives of a fair size. An American concern tendered bids on the 2-8-2 engines but lost the order to the Germans as the latter offered the same deliveries and agreed to build at a price which was 40 per cent lower, under the existing rate of exchange than the price of the American bidder.

With the recuperation of European industries, the United States must expect to meet with similar discouraging competition particularly with the rate of exchange as it stands today. With the German mark worth only 1.85 cents and the English pound worth only \$3.50 as against a normal parity of 24 cents and \$4.86, respectively, the exporters of the United States may well expect to find their foreign business greatly reduced, particularly where their foreign competitors can find the materials with which to fulfill their orders. In this particular case the German locomotive builders are on trial in the matter of delivery. Whereas they promised the same delivery as their American rivals it remains to be seen whether or not they meet their promise although it has been stated that some of the plants which received orders have been accumulating materials for some time and are well prepared to make good on their promised deliveries.

The total order of 82 locomotives was placed as follows: In Holland—24 to the Verkspoor of Amsterdam; in Germany—12 to Chemnitz (Saxony), 10 to Essenhinger, 24 to Henschel and 12 to Egesdorff. Contrary to newspaper reports none are reported to have been placed with Krupp.

The strong financial position of the United States is reacting against our exporters. No successful attempts have been made to even up the great disparities between ourselves and other nations in the value of money. These nations must do a large export business to raise the value of their currency and during this process American industries will suffer. Germany has not been the only country to cut in on America's exports. England with its pound sterling worth \$3.50 is underbidding American locomotive builders.



The Train Used by the Prince of Wales Arriving at Geelong, Australia

What Are the Available Tie and Timber Resources?*

Reforestation in This Country and Vast Supplies in South America Will Insure Against Famine

By Dr. Hermann von Schrenk
Consulting Timber Engineer, St. Louis, Mo.

THE FOREST SERVICE estimates the total stand of available timber in the United States at the present time to be 746 billion cubic feet, of which 485 billion is in the form of saw timber and 246 billion cubic feet is in the form of cord wood. Of the standing timber approximately one half is in Washington, Oregon and California; 62 per cent of all standing timber is found west of the Great Plains. Of the total available supply a little over one-fifth is hard woods and the remainder soft wood. The total timber used per year amounts to about 26 billion cubic feet, of which some of the larger items are as follows:

| | Thousand cu. ft. |
|---|------------------|
| Lumber | 8,913,300 |
| Hewn ties | 1,050,000 |
| Fencing | 1,800,000 |
| Fuel | 10,450,000 |
| Destruction by fire..... | 1,080,000 |
| Destruction by insects and disease..... | 650,000 |

At the present rate of consumption, it will be noted that there is practically 30 years' supply if regrowth is not considered.

The Forest Service estimates that the annual growth on present forested areas is approximately six billion cubic feet. At the present rate of cutting, the forests in New England, the Middle Atlantic, Central and Gulf states will not last very long. Quoting from a recent Forest Service report: "Within the next 10 years the lumber cut will probably drop to one billion board feet; within 20 years most of the timber areas containing high grade timber will be cut off and the remaining timbers will be either on farm wood lots or on a few remaining large tracts and will be made up of second growth or the trees which were left as worthless at the time of first cutting." Similar statements are made for most of the sections. The southern pine forests are being cut out at a rate which, according to a statement recently made by the Southern Pine Association, indicates that approximately 82 per cent of the saw mills now operating in the south will be cut out in 5 years or less and over 97 per cent will be cut out in 10 years or less with a corresponding reduction in the output of 78 per cent. However, this does not mean that the total production will be reduced at this rate because there will probably be many small mills in so-called second-growth tracts.

The outlook for the 30 years' supply above referred to deals with the timber situation as a whole. In all probability the tie supply will extend for a considerable additional period. Almost any kind of tree is now utilized for tie purposes, particularly since most species have been made more or less suitable for use as ties by chemical preservation. Then again, the tie supply is not dependent upon the saw mill. The largest tie supply will come to the railroads in the form of hewn ties, made in many instances in small numbers from farmers' wood lots and so-called cut-over lands. As the output of sawed ties from large mills is reduced, the probability is that small mills will appear here and there as they have already done in many of the eastern states and yield local ties in regions which may have been regarded as wholly exhausted.

Railroads Need Not Worry

The conclusions to be reached by a careful study of the Forest Service figures indicate that the American railroads need not worry particularly for some years to come. There will doubtless be changes in the source of supply, changes in the kinds of wood used, changes in the methods to make certain types of wood better fitted for crosstie purposes and probably changes in first cost.

The second source of supply will be from countries in Central America and South America—in other words, possible supplies of tropical hard woods. From time to time during the last 30 years there have been sporadic tie shipments of one kind and another from tropical countries, but this field of supply has practically not been touched. At the present time numerous offerings are being made of various kinds of tropical woods and a brief review of the tropical situation may not be without interest. Mexico, the nearest country with a relatively large timber supply, has a forest area of approximately 20 million acres most of which belongs to the Mexican government. The forest is of two kinds—the mountain and highland forest composed largely of pines, and the tropical forest. Some of the pines are of very superior quality. Most of the pine areas, however, are situated on mountain ranges more or less inaccessible at present. The other, or the tropical forest, extends along the edges of the Central plateau and contains a large number of tropical hard woods. For instance, in the territory tributary to Vera Cruz there are some 85 different species of oak. Guatemala, Nicaragua and other Central American republics have large supplies, most of which, however, are located on the western side. On the Gulf of Mexico side there are considerable pine forests, particularly in Nicaragua, Honduras and Guatemala, many of them easily accessible from the coast and producing a species of pine of highly resinous character.

South American Resources

The chief tropical resources, however, are in South America. It is almost impossible to state the actual extent of these resources. The Andes mountains are forested for practically their entire length and very little of the timber in the mountains has been cut, due largely to difficulties of transportation and lack of demand. Brazil has probably the largest area. According to Zon, the Amazon flows for a distance of 1,860 miles through a virgin forest which stretches 1,100 miles from east to west and 750 miles from north to south and occupies an area of 825,000 square miles. This would be equal to a section of the United States extending from the Atlantic Coast to Colorado and from Chicago to the Gulf. Several years ago a number of the eastern railroads imported a considerable number of species of wood from the Amazon region, which are now in track in New Jersey, New York and Connecticut. The woods are all extremely hard and bear no resemblance whatever to the woods found in the United States. The Guianas are very rich in forest resources and there are numerous rivers which would facilitate bringing out desirable timbers. It is in these countries that the valuable green heart and mora are found. Venezuela and Colombia, although with fewer for-

*Abstracted from an address given before the Roadmasters' and Maintenance Way Association at St. Louis, Mo., on September 22, 1920.

ests, can also be counted upon for a very large future supply. On the west coast, the mountainous parts of Chile and Peru are extensively forested but there is practically no utilization of their woods at the present time. In fact, these countries import most of their timbers from the United States. The West Indies, while heavily forested in some sections, cannot begin to compare as to quantities available with Central and South America.

While these vast quantities of timber are undoubtedly available in the tropics, attention should be called to the fact that immediate unlimited uses of these resources can hardly be looked for. Tropical timbers grow in dense jungles (excepting the pine forests in Mexico and Central America) and usually a large number of species grow close together. The forest is very different from the northern forests where a certain species may predominate on an acre.

Fitness of Tropical Wood for Ties

In this connection it should be pointed out that the fitness of tropical woods for use as ties in the United States is as yet almost wholly unknown. Most species have very hard woods which in their native lands may have given excellent service in the construction of buildings, or as railroad ties, bridge lumber, etc. When brought to the northern temperate regions, however, many of these very excellent woods fail utterly when used in the form of track ties. These hard woods split and check when exposed to the wide extremes of temperature running from zero to 125 deg. F. or more. In other words, they are unable to withstand the expansion and contraction to which they are naturally subject in most of the regions of the United States. As there is no means of foretelling what any tropical wood is going to do, it is obvious that the purchase of any particularly number of any species must be attended with considerable risk. During the last 30 years a large number of species have been imported but owing to unfavorable records both as to their names, origin and years of service, correct data as to their fitness for tie purposes are wanting in most cases. Sufficient is known, however, to indicate the purchase of tropical woods in the form of ties irrespective of what country they come from should be consummated only after the most careful investigation as to their names and after years of trial in small quantities of definitely identified species in actual track service in the United States.

In considering the forest resources in the United States reference has already been made to the amount of timber cut and grown. No consideration of a possible tie supply would be complete without very definite and positive reference to the supply which could be obtained if proper forest measures were taken by the government and the people of the United States. One should not forget that while trees grow slowly they grow constantly and the cumulative effect of this persistent growth when taken over considerable areas is surprisingly large. United States Forester Graves made a statement last year that if the southern pine forest, covering 124,000,000 acres, were fully covered with trees, it would produce an average of 70 cu. ft. per acre per year or 27½ billion feet board measure per year. One can realize the enormous amount of regrowth which takes place when he considers that a large portion of the yellow pine ties utilized during the last 20 years have grown since the civil war.

Perhaps the best summary of future possibilities is given by Forester Greeley in the forest service report to the Senate. "If all of this land had been cut over in the first place with due regard to securing a future stand and had been protected from fires and excessive grazing after cutting, it would now be producing timber at least three times as fast as at present. Judging from the experiences of other countries and from results obtained where forests have been carefully treated in our own country, it is believed entirely conservative to assume that the 3,260,000 acres could pro-

duce at an average rate of 60 cu. ft. of wood per acre per annum or, in terms of timber, 150 ft. b.m. per acre per annum. This would mean a total growth on the present area of cut-over forest land, including that now devastated, of 19½ billion cu. ft. of wood, including 40 billion ft. 6 in. of saw timber. At the same rate of production for the remaining 137,000,000 acres of virgin forest in which there is now no net increment, our total commercial forest area is capable of producing annually after the virgin timber has been cut off, at least 27¾ billion cu. ft. of wood including 70 billion ft. b.m. of saw timber. This exceeds our present rate of use and destruction. With a reasonable per capita consumption it would be able to meet indefinitely the needs of our growing population for wood and other forest products.

Southeastern Express Company

WASHINGTON, D. C.

MUCH INTEREST has been created in Washington by the announcement of the organization of the Southeastern Express Company in Birmingham, Ala., articles of incorporation under the Alabama law having been filed with the probate court of Jefferson county on October 6.

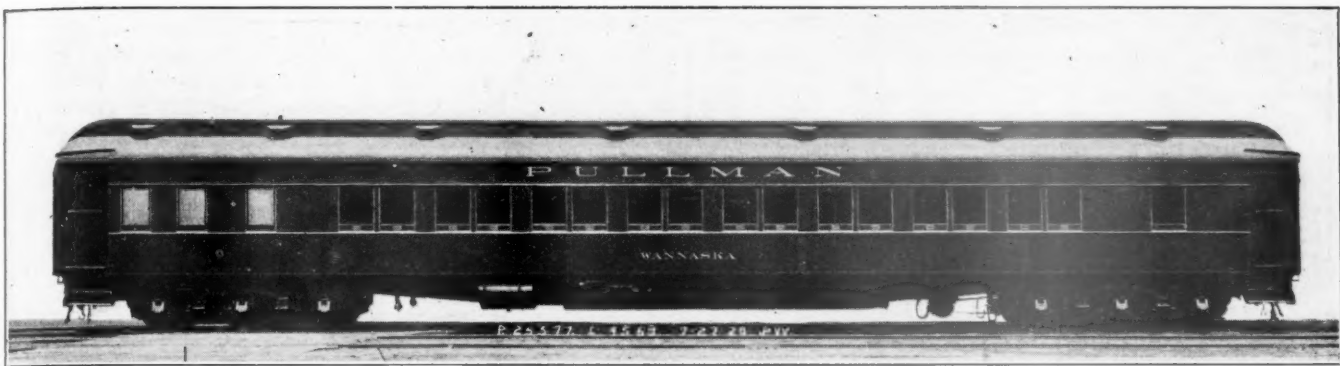
It is believed here that this may represent the beginning of a fight which for a long time has been known to be brewing between interests which favor the operation of the express business of the country by a single corporation and those which oppose unified management and wish to return to the territorial handling of the express business which prevailed prior to the taking over of the railroads by the United States Railroad Administration.

As the charter of the Southeastern company empowers it to "own and operate a railway express business in the Southeast and elsewhere" and as its purpose was stated to be "to afford such railway express service and facilities to the Southeastern section of the United States as the public necessities and convenience of that section require," it is believed that the new company has been given assurances of the franchise to do business on some of the prominent railroads of the South and will shortly enter the field as an active competitor of the American Railway Express Company. It is also expected that other companies may be organized in other sections of the country with similar assurances from railways operating in the territory they expect to serve.

There is now before the Interstate Commerce Commission for its approval a form of contract which the American Railway Express Company has prepared and offered to the various railways of the country, this contract being based on the theory of unified operation of the express business. Some railway companies, among them some of the strong companies operating in the South, are bitterly opposed to signing the contract submitted by the American Railway Express Company, claiming that some of the provisions of the contract are unfair to the railways, but basing their opposition mainly on unified operation of the express business.

The officers and directors of the Southeastern Express Company are connected with some of the strongest banks of the South and some of them are directors of leading railroads. Captain Charles A. Lyerly of Chattanooga, Tenn., president, is president of the First National Bank of Chattanooga and a director of the Alabama Great Southern, one of the lines of the Southern Railway System; Robert F. Maddox of Atlanta, Ga., vice-president, is president of the Atlanta National Bank, and a director of the Seaboard Air Line; D. P. Bestor, Jr., of Mobile, Ala., secretary, is vice-president of the First National Bank of Mobile; H. C. Armstrong of Selma, Ala., treasurer, is president of the City National Bank of Selma. The officers, together with George L. Baker, president of the National State Bank of Columbia, S. C., make up the directorate.

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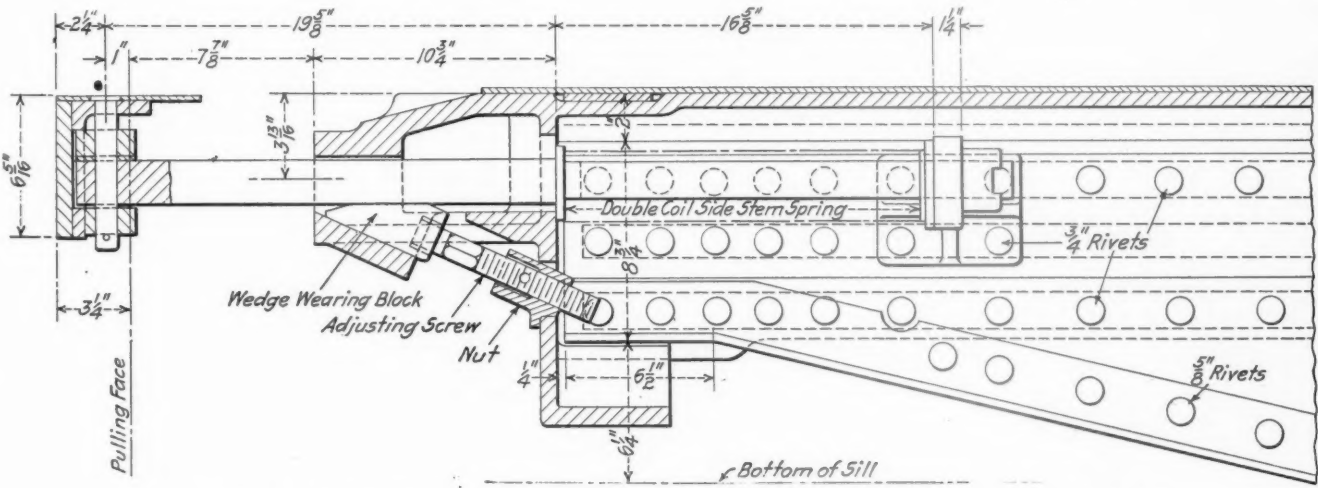
Latest Type Pullman Sleeping Car

Improvements in New Pullman Sleepers

Changes in Details Which Have Been Developed to Add to the
Comfort and the Safety of Travel

ALTHOUGH NO CHANGES in basic design have recently been made in its equipment, the Pullman Company has been constantly working on the development of detail improvements most of which have had for their object an increase in the comfort or safety of the occupants of Pullman accommodations. A number of changes of this nature

In the new cars both the upper and lower diaphragm buffer mechanisms have been arranged to maintain the alignment of the diaphragm within the limits of the clearance in the pocket, thus eliminating the greatest source of noise at the ends of the car. In this design provision has been made to take up wear so that the diaphragm may be readily



Section Through the Lower Buffer Side Stem, Showing Wear Adjusting Screw and Wedge

have been incorporated in the new sleeping cars which the company has been building at its Pullman works, Chicago, since the return of the railroads to private operation.

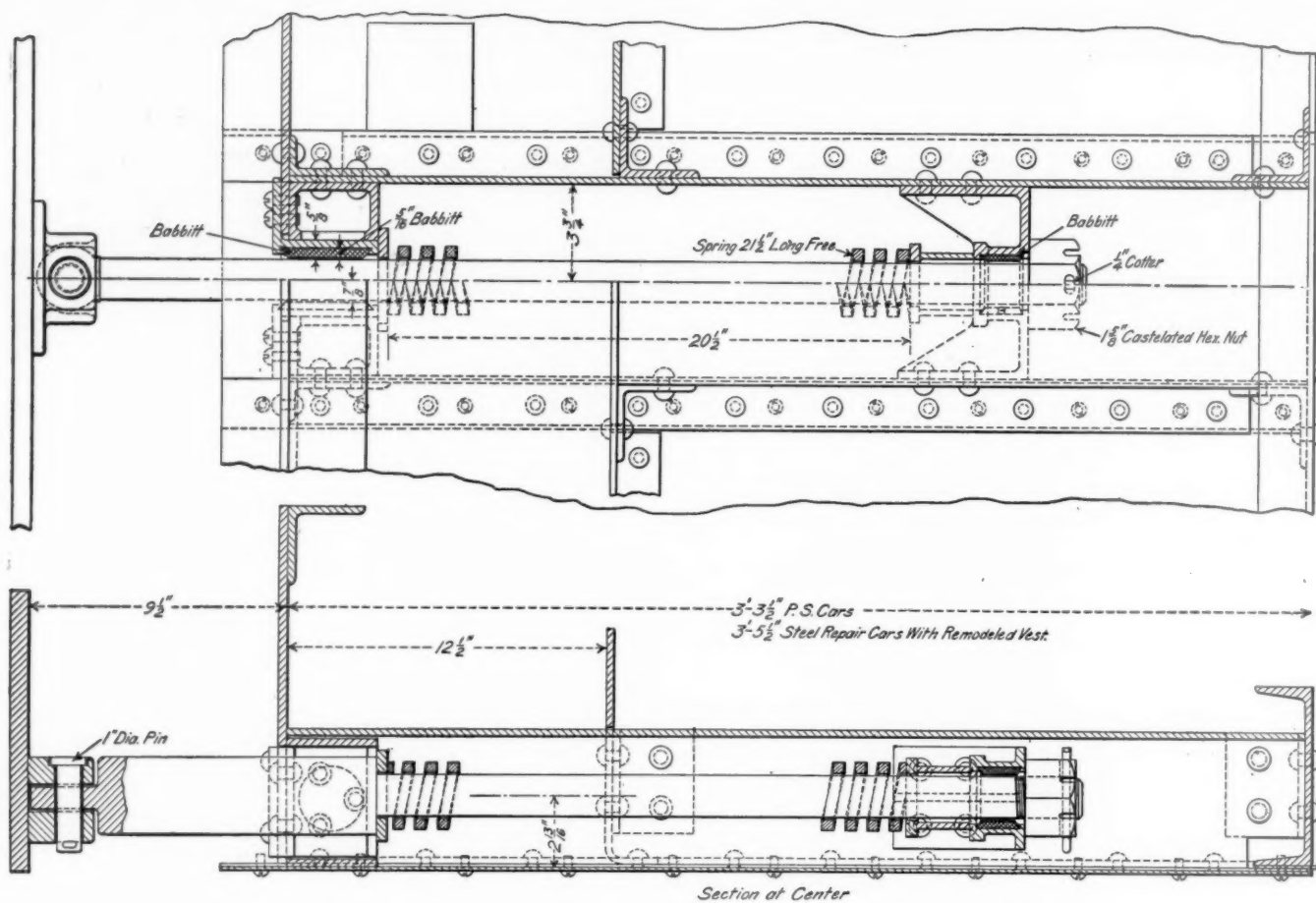
Diaphragm Mechanism

The metal diaphragm is now a standard feature of Pullman car construction and cars equipped with these diaphragms have been in service several years. The clearance between the diaphragm and the sides of the narrow metal pocket within which it telescopes is necessarily limited. But the method by which these diaphragms have been supported has permitted considerable lateral motion at the top and this has tended to increase rapidly as the buffer side stems wear into the surfaces of the openings in the platform end casting through which they pass. These conditions have resulted in the constant slamming of the diaphragm against the sides of the pocket and the noise thus caused led to numerous complaints.

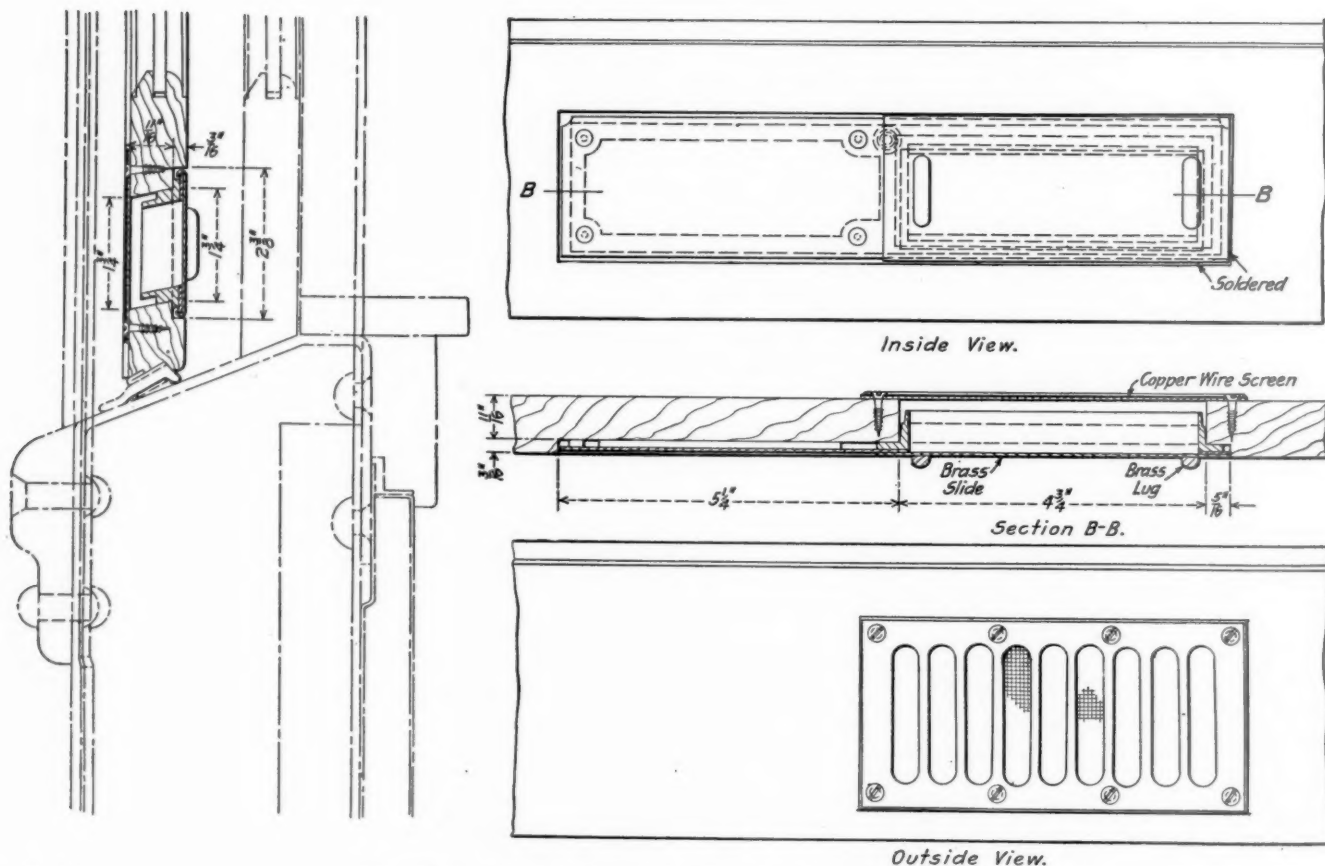
restored to its normal position as frequently as conditions require.

The height of the diaphragm is controlled by the surfaces on which the buffer side stems rest. In the new cars these stems are supported on adjustable shims or wedge blocks let into the platform end casting and adjusted as shown on one of the drawings. The adjusting device consists of three pieces, the shim, the adjusting screw and the nut. The parts are readily assembled or removed by turning back the adjusting screw into the nut, which permits the nut to be inserted or lifted out of the opening in the casting. The shim is then free to drop out. When properly adjusted the screw is prevented from turning back by a cotter which passes through slots in the extended portion of the nut and one of two holes drilled through the screw at right angles to each other.

Upper diaphragm buffers either of the semi-elliptic spring type or of the stem and coil spring type have never pro-



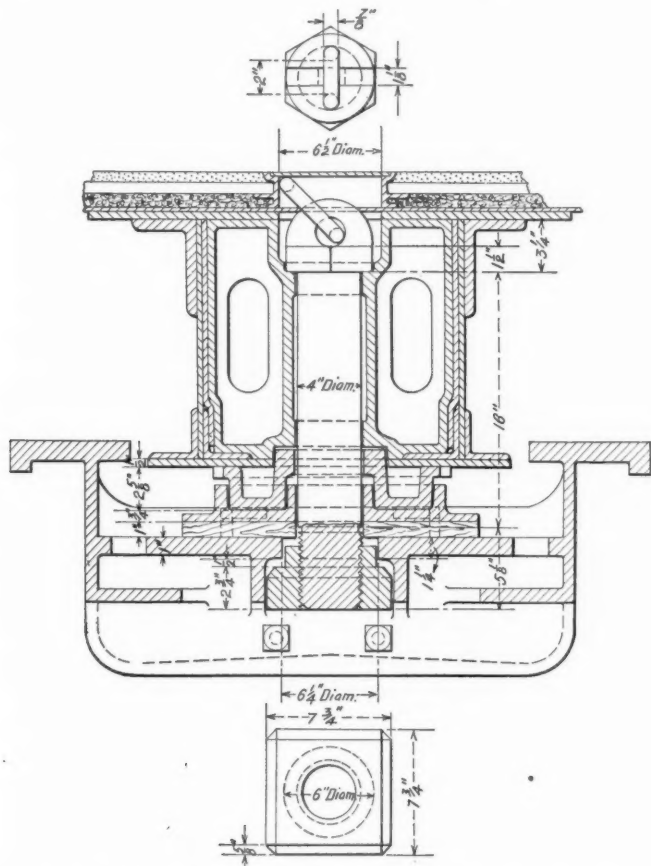
Single Stem Diaphragm Mechanism with Babbitted Centering Plates



Ventilator Applied to the Lower Rail of Outside Sash

vided a satisfactory means of centering the top of the diaphragm. Consequently the entire reaction from the lateral force at the top of the diaphragm caused by the swaying of the cars has been taken by the buffer side stem supports. This has caused excessive wear and a rapid increase in the lateral movement at the top of the diaphragm.

To overcome this a single stem upper diaphragm mechanism has been designed in which the stem is restrained between lateral bearings where it emerges from the end of the car. These bearings are removable malleable iron castings faced with babbitt, inserted from the outside and held in



Locked Center Pin with Full Diameter Effective for Stress Resistance

place by machine screws applied through flanges to the end of the car. When worn they are readily replaced, and after rebabbiting are ready for further service. The buffer stem rear guide is also lined with babbitt, but this casting is riveted in place and is not designed for removal between shoppings.

Sash Ventilators for Lower Berths

Although an extremely simple device, the sash ventilator which has been placed in the lower rail of the outer or storm sash of the car windows is one which immediately appeals to the occupants of lower berths and it has already been the object of a number of individual expressions of appreciation from the traveling public.

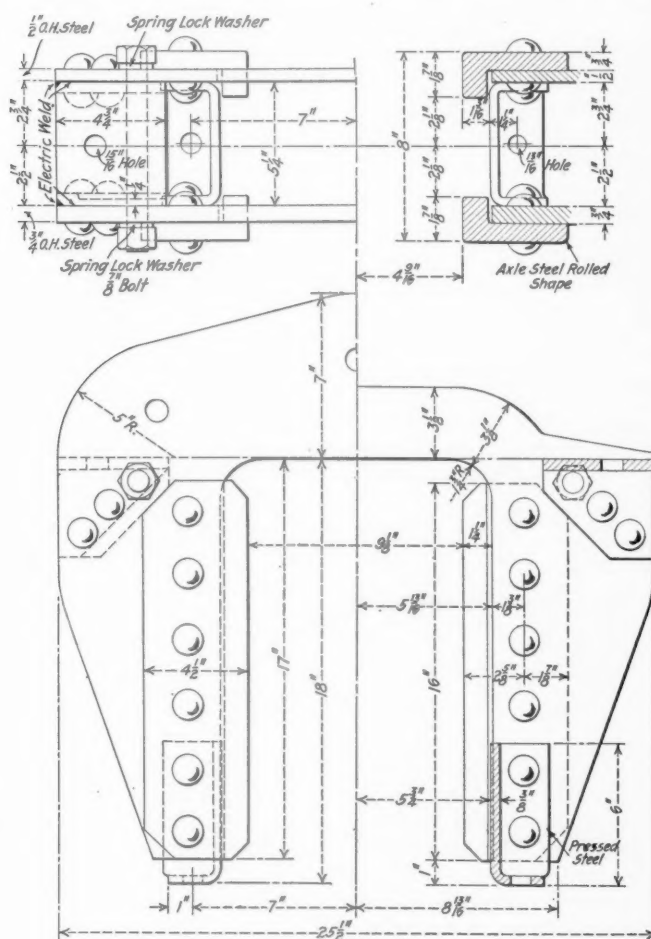
The difficulty in always securing satisfactory ventilation and temperature regulation in lower berths during the seasons when heat is required and the windows are normally kept closed is well known. Under these conditions the only recourse of the occupant of a lower berth who wishes additional ventilation is to raise the inner sash and then slightly open the outer sash, adapting some portion of his personal belongings to serve as a stop to prevent it from working shut.

The ventilator furnishes a screen-protected opening, closed with a horizontally operating slide, which provides easy and close regulation of the amount of air admitted.

The Locked Truck Center Pin

While it is impossible to design equipment strong enough to resist destruction under all conditions of collision impact, it is generally recognized that everything which will tend to hold the underframes in the same horizontal plane will exert a powerful influence in the prevention of telescoping, the form of destruction usually responsible for the greatest loss of life in train accidents.

The use of a locked center pin as a means of resisting the tendency of one underframe to climb over the top of another has received considerable recognition and at least one self locking center pin has been developed. The locked center pin is effective only so long as it holds the truck and car body together. The self locking type is open to the possible objection that the full area of the pin section is not available to resist tension or shearing stresses and therefore un-



Built-up Pedestal for Pullman Trucks

der certain conditions might not be as effective in preventing a separation of the truck and car body as a pin of solid section.

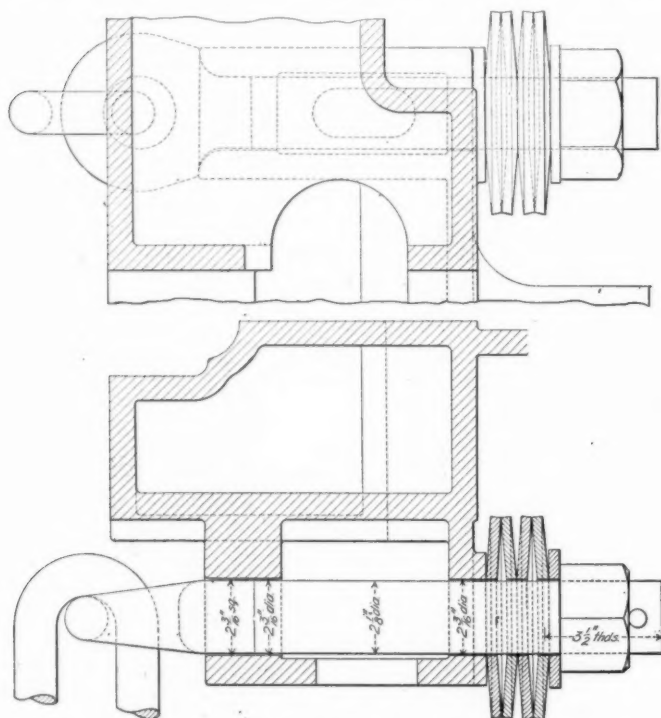
These considerations have led to the design of the center pin shown in one of the drawings. The pin is a forged steel bolt four inches in diameter with a shallow hexagonal head and a square nut of special design. The head sets in a shallow hexagonal socket at the bottom of a pocket in the center sill filler casting. The nut is placed in a square recess in the under side of the truck bolster and two 7/8-in. bolts applied through flanges of the bolster casting hold it in position when the center pin is not in place. In applying the bolt, it is dropped

in place and screwed into the nut, which is held in sufficiently close alinement by the square recess in which it is placed to prevent any difficulty in starting the threads. When drawn up as far as it is possible to turn the bolt, the head is brought into register with the socket and dropped in. This locks the bolt and nut except for the slight turning of the nut due to the curving of the trucks, which it is expected will prevent the nut from sticking and causing trouble when removal is necessary.

The use of check chains has been dispensed with and a plate on which is cast in raised letters the legend, "Locked Center Pin, Remove From Inside," is attached to both side frames of each truck between the center and inner pairs of wheels.

Built Up Truck Pedestals

In order to overcome the occasional failures of cast truck pedestals which have occurred in service a pedestal built up of plate and rolled and flanged sections has been designed



Application of Safety Chains with Spring Washers

and applied to the new equipment now being built. The outside and inside plates are of $\frac{3}{4}$ -in. and $\frac{1}{2}$ -in. open hearth steel, respectively, and are separated by steel pressings at the top and bottom. The top pressing is of one-half inch material and is electrically welded and riveted in place. The lower pressing is of $\frac{3}{8}$ -in. material. The jaw faces are formed by two rolled steel pieces of special angle section which are riveted to the outside of the plates with the short legs turned in. These pedestals are built up and applied as units.

Safety Chain Application

One of the interesting details in the construction of these cars is the use of spring washers on the safety chain anchor bolts. The application is shown in detail in one of the drawings. The washers are 6 in. in diameter and are cupped to a depth of $\frac{5}{32}$ in., each, thus providing for a full load travel of the safety chain bolt of $\frac{5}{8}$ -in. This arrangement, which is common in European practice, acts as a cushion for part of the shock to which the chain and bolt are subjected when brought into action by a failure of the coupler. In the application shown these washers have a full load capacity in the $\frac{5}{8}$ -in. travel of approximately 50,000 lb.

Payment of Guaranty Delayed

WASHINGTON, D. C.

THE DIFFICULTIES that have been experienced by the railroads in getting money out of the United States treasury, either on account of their guaranty or as a loan from the \$300,000,000 fund provided for that purpose, have been brought to public attention by the issuance of an opinion by the comptroller of the treasury, W. W. Warwick, advising the Secretary of the Treasury that he must not pay out money on certificates by the Interstate Commerce Commission for partial payments to the railroads on account of their guaranty for the six months period ending August 31, but must await the filing of claims by the railroads and the determination of the commission as to the exact amounts due to the roads to make the payments in full.

Payments to the roads on account of somewhere between \$300,000,000 and \$400,000,000, much of which is urgently needed at this time, and the lack of which is causing a number of roads to be threatened by strikes of their employees because of the delay in paying their back wages, is held up as a result of the decision. An appeal for some relief from the decision has been made to the President by Alfred P. Thom, general counsel for the Association of Railway Executives, asking the President to use his influence to obtain a reconsideration of the matter.

Attention was called in these columns two weeks ago to the fact that the treasury department was taking the position that partial payments could not be made under the law after September 1, in addition to the advances which had been made in accordance with specific authority of the law up to that time. At that time it was not known whether the commission intended to press the point but on October 7 the treasury department made public an official decision of the comptroller of the treasury in the case of two certificates submitted to the treasury by B. H. Meyer, as chairman of Division 4 of the Interstate Commerce Commission. The certificates were for \$500,000 for the Grand Trunk Western and \$250,000 for the Detroit, Grand Haven & Milwaukee.

The amount of the six months guaranty is estimated at about \$600,000,000, or the total of the deficit incurred by the roads during the six months period, after paying the retroactive wage increase, and enough to make up half a year's standard return. The exact amount of the August deficit has not yet been reported and the determination of the final amount also depends on what the Interstate Commerce Commission will allow the roads to charge for maintenance. Up to September 1 the commission had issued certificates for about \$234,000,000 as advances on account of the guaranty, on applications from the roads for money with which to pay interest, dividends and in some cases current expenses. During the latter part of August there were also a number of applications for additional certificates for money to pay the wage increase, awarded by the Railroad Labor Board of July 20 and made retroactive to May 1. Many roads, however, had not figured the amount of the back wages by September 1 and needed additional sums for that purpose. The commission attempted to meet the situation by certifying additional amounts for less than the full estimated amount of the guaranty to meet the requirements of the roads pending the complicated process of determining just how much the guaranty amounts to for each road. The objection of the treasury department to these certificates was that they were not in proper form because they contained a statement that an additional amount might be necessary later to make good to the carrier the full amount of its guaranty under Section 209 of the transportation act and that the law did not contemplate piece-meal payments after September 1. At least two roads, foreseeing the delay in collecting their guaranty from the government, have asked authority from the Interstate Commerce Commission to borrow money from banks

with which to pay back wages and other items of operating expenses. The Indiana Harbor Belt asked to borrow \$2,200,000, saying it expected about \$3,000,000 on final settlement of the guaranty, and the Richmond, Fredericksburg & Potomac also asked permission to borrow \$250,000 solely for the purpose of paying wages.

As has previously been reported the treasury department had also held up payment on various certificates issued by the Interstate Commerce Commission for loans to carriers under Section 210 of the act, and it also appears that many certificates have been held up that were issued by the commission under Section 204 of the act, which provides for the reimbursement of the short line railroads that were relinquished by the Railroad Administration for their losses during the period of federal control.

As in the case of the guaranty, the determination of the amounts due to the short lines involves some complicated accounting problems and the commission has felt it necessary to issue certificates covering partial payments pending a final settlement. A number of such certificates for partial payments had been honored, but since that time one of them has been submitted to the comptroller of the treasury for a ruling and the commission has recalled the others.

Many of the railroads also have sums due them from the Railroad Administration on account of their guaranty for the period of federal control which they will be unable to collect until they reach a final settlement with it, as it takes the position that it has already paid out as much as it is safe for it to do pending the settlements. The decision of the comptroller as rendered to the Secretary of the Treasury is in part as follows:

Comptroller Warwick's Decision

"I have your letter of September 27 transmitting two certificates which have been submitted to you by B. H. Meyer, as chairman, Division 4 of the Interstate Commerce Commission.

"My decision is requested whether you are authorized under the provisions of paragraph (g) of section 209 of the act of February 28, 1920, 41 Stat., 466, to make payment on the certificates as submitted.

"One of the certificates submitted, No. A-246, is as follows:

INTERSTATE COMMERCE COMMISSION WASHINGTON

Certificate No. A-246

CERTIFICATE OF INTERSTATE COMMERCE COMMISSION UNDER SECTION 209 (g) TRANSPORTATION ACT, 1920

To the Secretary of the Treasury of the United States:

- 1.—The Interstate Commerce Commission, hereinafter called the Commission, hereby certifies that the Grand Trunk Western Railway Company, a corporation of the states of Michigan and Indiana, hereinafter called the Carrier, is a carrier as defined in paragraph (a) of section 209 of the Transportation Act, 1920; that the Carrier filed with the Commission, on or before March 15, 1920, a written statement that it accepted all of the provisions of the said section 209.
- 2.—The Commission has ascertained and hereby certifies to the Secretary of the Treasury that the amount of Five Hundred Thousand Dollars (\$500,000) is necessary to make good to said Carrier the guaranty provided by section 209 of the Transportation Act, 1920.
- 3.—This certification is made subject to the proviso that the Commission may hereafter certify to the Secretary of the Treasury such additional amounts as may be necessary to make good to the Carrier the guaranty of said section 209 of the Transportation Act, 1920.

Dated this 25th day of September, 1920.

By the Commission, Division 4.

(Signed) GEORGE B. MCGINTY,
Secretary.

The other certificate, No. A-247, is identical with this except that it relates to the Detroit, Grand Haven & Milwaukee Railroad Company and is for \$250,000.

"Your doubt as to the sufficiency of this certificate arises from the fact that paragraph 2 thereof does not state that \$500,000 is the amount necessary to make good the guaranty. It is merely to the effect that said amount is necessary to make good the guaranty and it is qualified by paragraph 3,

which reserves to the commission the right thereafter to certify "such additional amounts as may be necessary to make good to the carrier the guaranty."

"Considering the form in which this certificate is made and the amount stated therein it is apparent that said amount is not the amount ascertained by the commission to be necessary to make good the guaranty to this carrier, but is, in fact, only an amount estimated to be within the amount necessary to make good said guaranty. In other words, it is to be regarded as an advance or partial payment or payment on account on the carrier's claim under the guaranty. This raises the question whether the provisions of paragraph (g) authorize such advances or partial payments or payments on account.

"The direction in the statute is that the commission shall, as soon as practicable after the expiration of the guaranty period, ascertain and certify the several amounts necessary to make good the guaranty to each carrier and that the Secretary of the Treasury shall draw warrants for the amount shown in such certificate as necessary to make good such guaranty. From this language it would appear to be clear that paragraph (g) contemplates and authorizes only one payment in each case, said payment to be made after the commission shall have ascertained and certified the amount necessary to make good the guaranty. That such was the intent and purpose of this paragraph is further indicated by the fact that in the succeeding paragraph provision was made for advances during the guaranty period of such sums, not in excess of the estimated amount necessary to make good the guaranty, as are necessary to enable the carrier to meet its fixed charges and operating expenses. Having thus provided for the fixed charges and operating expenses during the period of six months after termination of Federal control and having by release from federal control and by authorizing increased rates enabled the carrier to make its own provision for caring for its financial obligations after the six months guaranty period, I think it is but reasonable to assume that Congress intended that the payments authorized under paragraph (g) should be made only after a carrier had submitted its entire claim under the guaranty and the commission had ascertained the amount due thereon. The law providing for the guaranty was enacted before the beginning of the guaranty period and it must be assumed that all carriers affected thereby were aware of its provisions at the time it was passed. Therefore, if any carrier neglected, during the guaranty period, to avail itself of the provisions of paragraph (h) or to have its records and evidence in proper shape for the presentation of its entire claim under paragraph (g) within a reasonable time after the termination of the guaranty period the responsibility for delay in receiving final payment under the guaranty must rest with the carrier and not the Government.

Making Advances Held Not to

Be Within Letter of Law

"It is noted that, notwithstanding the fact that the advances authorized under paragraph (h) are in no case to be in excess of the estimated amount necessary to make good the guaranty, provision is made in said paragraph for securing the United States against the contingency of such advances being in excess of the amount of the guaranty as finally determined by the commission. Since it was deemed necessary to provide against overpayments resulting from erroneous estimates during the guaranty period it must be assumed that similar provision would have been made in paragraph (g), if said paragraph had been intended to authorize payments based on estimates. No such provision having been made the only logical inference is that payments on estimates are not authorized under said paragraph.

"Reading paragraph (g) in the light of the other provisions

of section 209 and considering the number of debit and credit items which may be involved in the determination of the amount payable upon final settlement under the guaranty I am of opinion that the making of advances or partial payments under said paragraph (g) is not within either the letter or the spirit of the law.

"I can find nothing in the law to justify a conclusion to the effect that said paragraph (g) authorizes any payment to a carrier before the amount due under the guaranty has been ascertained by the commission.

"I think it is quite clear that the law does not give to the carrier the right to file its claim piecemeal and to have certificates for payment made by the commission without limit as to number or time.

"If payment is authorized upon certificates made in the form hereinbefore set forth then there is no legal requirement that any settlement made under the provisions of paragraph (g) be regarded as final, and there would be no end to the work of the commission in examining and re-examining the accounts of the carriers as new items of claim might be presented for years to come. I cannot believe that such was the intent or purpose of the law. I think the law contemplated the adjudication and final settlement of these claims as soon after the expiration of the guaranty period as practicable.

"The needs of certain carriers for funds is recognized but this office may not construe the law to authorize the payment of public money except in such amounts and at such times as Congress has authorized by law, no matter how urgent the needs of claimants.

"Answering your question specifically I have to advise that you are not authorized to issue a warrant upon a certificate in the form submitted in this case or upon any other certi-

"The carrier having applied in time is not responsible for such delay as may be necessary in action by the Interstate Commerce Commission or the Treasury Department."

Freight Car Loading

Continues to Increase

WASHINGTON, D. C.

THE VOLUME of freight traffic handled by the Class I railroads during the week ending September 25 established a new high record for this year and exceeded that for the corresponding weeks of 1919 and 1918. The number of cars loaded with commercial freight for that week, according to reports compiled by the Car Service Division of the American Railway Association, was 994,687, as compared with 987,041 in 1919 and 991,980 in 1918. The best previous record for a week this year was 985,064 cars, in the week of August 28. For the week of September 18 the total loading was 983,919 cars. For the week of September 25 increases are shown as compared with the corresponding week of 1919 in the loading of grain and grain products, coke, ore, merchandise and less than carload freight, while decreases are shown in the loading of livestock, forest products, coal and miscellaneous freight. The loading of grain and grain products shows an increase as compared with 1919 for the first time this season. As compared with the corresponding week of 1919 decreases in total loading are shown, however in the Eastern, Allegheny, Southern and Central Western districts, the increases being in the Pocahontas, Northwestern and Southwestern districts. The report for the week of September 25 follows:

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

Summary—All Districts: Comparison of Totals This Year, Last Year, Two Years Ago. For Week Ended Saturday, September 25, 1920

Freight Car Loading Continues to Increase

| Districts | Year | Grain and grain products | Live stock | Coal | Coke | Forest products | Ore | Mdse. L. C. L. | Miscellaneous | Total revenue freight loaded | | | Received from connections | | |
|-------------------|------|--------------------------|------------|---------|--------|-----------------|--------|----------------|---------------|------------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|
| | | | | | | | | | | This year 1920 | Corresponding year 1919 | Corresponding year 1918 | This year 1920 | Corresponding year 1919 | Corresponding year 1918 |
| Eastern | 1920 | 6,582 | 2,836 | 55,802 | 3,587 | 8,464 | 12,643 | 47,852 | 100,961 | 238,527 | 241,743 | 232,320 | 266,468 | 259,541 | 259,585 |
| | 1919 | 7,258 | 2,689 | 57,741 | 2,815 | 8,174 | 6,349 | 28,704 | 128,013 | 214,557 | 214,874 | 229,093 | 141,860 | 143,348 | 190,856 |
| Allegheny | 1920 | 2,820 | 3,527 | 64,300 | 6,752 | 4,293 | 13,665 | 38,990 | 78,210 | 139,282 | 139,947 | 139,947 | 139,947 | 139,947 | 139,947 |
| | 1919 | 3,294 | 2,922 | 65,086 | 4,863 | 4,686 | 16,794 | 43,282 | 73,947 | 139,185 | 139,185 | 139,185 | 139,185 | 139,185 | 139,185 |
| Pocahontas | 1920 | 165 | 417 | 25,583 | 741 | 2,043 | 245 | 2,878 | 7,113 | 39,185 | 39,147 | 42,542 | 19,013 | 12,601 | 24,712 |
| | 1919 | 222 | 422 | 25,353 | 621 | 2,032 | 272 | 132 | 10,093 | 39,147 | 39,147 | 42,542 | 19,013 | 12,601 | 24,712 |
| Southern | 1920 | 3,381 | 2,408 | 25,139 | 1,319 | 19,136 | 2,989 | 37,236 | 38,312 | 129,920 | 131,567 | 125,867 | 77,267 | 74,331 | 71,407 |
| | 1919 | 3,178 | 2,845 | 26,374 | 285 | 19,731 | 2,659 | 20,228 | 56,267 | 129,920 | 131,567 | 125,867 | 77,267 | 74,331 | 71,407 |
| Northwestern | 1920 | 15,598 | 8,583 | 11,614 | 1,548 | 16,074 | 47,768 | 27,501 | 39,223 | 167,914 | 165,868 | 173,978 | 61,592 | 65,415 | 82,264 |
| | 1919 | 14,460 | 10,117 | 12,820 | 595 | 16,937 | 39,852 | 21,431 | 49,656 | 167,914 | 165,868 | 173,978 | 61,592 | 65,415 | 82,264 |
| Central Western | 1920 | 11,711 | 12,933 | 24,204 | 375 | 6,003 | 3,243 | 32,505 | 45,491 | 136,465 | 137,077 | 129,182 | 71,275 | 76,493 | 68,630 |
| | 1919 | 11,830 | 13,702 | 23,078 | 314 | 6,101 | 3,538 | 24,500 | 54,014 | 136,465 | 137,077 | 129,182 | 71,275 | 76,493 | 68,630 |
| Southwestern | 1920 | 4,362 | 2,939 | 6,178 | 138 | 8,368 | 386 | 17,689 | 28,059 | 58,119 | 56,765 | 58,998 | 82,434 | 52,637 | 49,419 |
| | 1919 | 4,308 | 2,360 | 6,972 | 150 | 7,462 | 576 | 10,613 | 24,319 | 58,119 | 56,765 | 58,998 | 82,434 | 52,637 | 49,419 |
| Total all roads | 1920 | 44,619 | 33,443 | 212,820 | 14,460 | 64,381 | 82,939 | 204,656 | 337,369 | 994,687 | 987,041 | 991,980 | 719,909 | 684,366 | 746,873 |
| | 1919 | 44,550 | 35,057 | 217,424 | 9,643 | 65,123 | 70,040 | 148,895 | 396,309 | 987,041 | 987,041 | 991,980 | 719,909 | 684,366 | 746,873 |
| | 1918 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Increase compared | 1919 | 69 | ..... | ..... | 4,817 | ..... | 12,899 | 55,761 | ..... | 7,645 | ..... | ..... | 36,543 | ..... | ..... |
| Decrease compared | 1919 | ..... | 1,614 | 4,604 | ..... | 742 | ..... | ..... | 58,940 | ..... | ..... | ..... | ..... | ..... | ..... |
| Increase compared | 1918 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,707 | ..... | ..... | ..... | ..... | ..... |
| Decrease compared | 1918 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 26,964 | ..... | ..... |

ificate which does not show that the amount stated therein has been ascertained and certified by the commission as the amount necessary to make good the guaranty.

"You ask also whether you are now authorized to make advances under paragraph (h) in cases in which application therefor was filed with the Commission on August 31.

"In reply to this question you are advised that you are authorized to make advances under paragraph (h) on all applications filed with the commission prior to September 1, 1920, subject, of course, to all the conditions and requirements of said paragraph, one of which is that the advance must be necessary to enable the carrier to meet its fixed charges and operating expenses during the guaranty period.

The freight car shortage (deferred car requisitions) shows a further reduction during the week ending September 23 to an average of 89,947 for the United States, as compared with 96,114 the previous week. Of the total 48,741 were box cars and 24,498 were coal cars.

Freight car accumulations during the week ending October 1 were reduced to 45,758, of which 17,845 were held for export and coastwise movement. For the previous week the total was 47,689.

Operating Statistics for July

As indicating the progress made by the railroads in their efforts to speed up the movement of freight, a report just

compiled by the Bureau of Railway Economics on freight car performance for the month of July shows that the mileage made by the average freight car per day, 26.1, was the greatest since the month of October, 1919, when the average daily mileage was 27.3. For July, 1919, the average was 24.1. For June the average was 25, and for each month of this year for which the figures have been compiled there has been an improvement both as compared with the preceding month and as compared with the corresponding month of last year, except in April, when the switchmen's strike was at its height. An improvement of one mile in the average is equivalent to an addition of 100,000 cars to the freight equipment of the country.

The Bureau's report also shows that the average number of tons of freight per loaded car, 29.6, was the greatest for any month since December, 1918, when the average was 29.8 tons. For July, 1919, the average was 27.8 and for June of this year it was 29.

These figures explain in part how it has been possible for the railroads, in spite of inadequate facilities and labor difficulties during the early months of the year, to handle a volume of freight traffic during the first seven months of 1920 greater than during the corresponding period of any of the past three years, as shown by a statement recently issued by the Interstate Commerce Commission.

The figures also show, however, that the average miles per car per day in 1920 has been less in each month than in the corresponding month of 1917 or in 1918 except January and February, 1919, and the tons per loaded car are still less than in some months of 1918. In July and August, 1918, the average was 30.1.

Further information reaching the Car Service Division of the results accomplished through drives conducted for the unloading of cars on Saturday afternoons and Sundays, indicates that on one railroad, during a period of nine weeks, there were unloaded on Saturday afternoons and Sundays 63,495 cars, or an increase of 24,992 cars over normal unloading. This is an average increase over normal of 2,777 cars each week, or 2.66 per cent of the total cars on that line.

Extending this per cent to all Class I railroads, indicates that with similar drives in effect on all such railroads, there would be added to the available equipment of the country 73,586 empty cars per week. This indicates, in a measure, the great possibilities that lie in drives and campaigns of this kind.

Recent Improvements on the Eymon Crossing

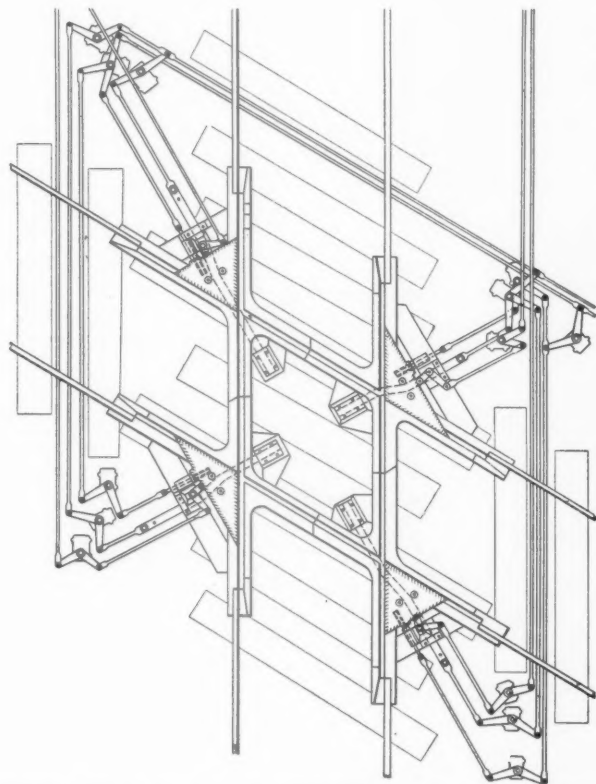
THE EYMON continuous rail crossing which has been subjected to actual service tests for the past six years has recently undergone some extensive improvements designed primarily to increase its adaptability for use in interlocking installations. The Eymon crossing depends for its distinctive properties on four triangular blocks of steel placed in the exterior angles of the four corners of the railroad crossing and arranged to slide in a direction perpendicular to the line bisecting the angle of the corner so that either one or the other flangeway will be closed up, thus providing a continuous rail for either track at will.

As a result of the service to which this type of crossing construction has been subjected, it has been found desirable to undertake certain modifications which are designed greatly to extend its adaptability to various classes of service. One change has been to increase the size of the movable blocks so that they have a length of 28 in. on each of the running rail edges. Another change has been to place all of the operating rods on the outside of the crossing so that there will be no

movable parts inside the diamond where they would be in danger of injury from dragging brake rigging, etc. Provision has also been made in the flangeways for the clearing out of dust or other foreign matter each time the movable block is shifted.

The design of the crossing has also been simplified so that the movable block is a single solid piece with the operating rods placed on the under side and with provision for the removal of the blocks as required for inspection or renewal without necessity for dismantling the crossing completely.

Another modification has involved a redesign of the connections for interlocking installations. Lugs have been pro-



General Plan of an Eymon Crossing as Arranged for Control from an Interlocking Tower

vided at the back of the movable block for the connection of a bell crank to be attached to mechanical bolt locking or to suitable electric locking as the case may be. Arrangements have been made for a plunger lock pin with a standard eight-inch throw so that the use of one of the Eymon crossings in interlocking layouts can be made to comply with standard safety requirements.

These crossings, which are manufactured by the Eymon Crossing Company, Marion, Ind., are adapted to the use of manganese steel construction with the movable blocks made of manganese steel castings of special composition.

THE JOINT COMMITTEE of Stresses in Track, of the American Railway Engineering Association and the American Society of Civil Engineers, is now gathering data in the field on curved tracks on the line of the Delaware, Lackawanna & Western in New Jersey, according to a statement made by A. N. Talbot, chairman of the committee, before the recent annual convention of the American Society of Civil Engineers at Portland, Ore. Following these tests it is expected that the party will go to New Mexico to make further tests on curved tracks of the Atchison, Topeka & Santa Fe. Because of the amount of time required to work up the data the committee does not expect to make more than a progress report at the annual meetings of the two associations next winter.

Oral Argument on State vs. Interstate Passenger Fares

WASHINGTON, D. C.

THE ISSUE between the railroads and the state railroad commissioners as to whether the Interstate Commerce Commission under the terms of the transportation act has been given increased power to remove state discriminations against interstate commerce, was sharply drawn in oral arguments presented before the full membership of the federal commission at Washington on October 11 and 12 in the New York and Illinois passenger fare cases. In these cases the railroads have petitioned the Interstate Commerce Commission to require an increase in the intrastate rates by the percentages authorized by the commission for interstate rates. The case was argued and briefs were filed not only by the railroads and the state commissions directly involved, but also by counsel for the Association of Railway Executives and the National Association of Railway and Utility Commissioners, which appeared on behalf of 42 state commissions in opposition to the position of the carriers, although 31 of the states have allowed the full amount of the advances allowed by the Interstate Commerce Commission. The position of the state commissions, as represented by John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners and a committee of five, was that in the transportation act Congress had merely written into the law the doctrine of the Shreveport case decision, and had not broadened the powers of the federal commission as to the rates for intrastate commerce, which Mr. Benton said is "none of the federal commission's business." Alfred P. Thom, general counsel for the Association of Railway Executives, on the other hand, contended that the act contains new law on the subject, in that the railroads for the first time have been given the right to complain of a state rate and that the Interstate Commerce Commission is authorized to remove a discrimination against the whole body of interstate commerce, not merely a discrimination against particular localities or persons.

Counsel for the state commissions made much of the fact that the Congressional committees before passing the act had left out the words authorizing the federal commission to remove an "undue burden" on interstate commerce, but Mr. Thom argued that this was immaterial since the law contained language authorizing the commission to consider intrastate rates on one hand and interstate rates on the other and determine whether either discriminates against the other. In other words, he said the commission must consider the whole field of interstate commerce and protect it, while the representatives of the state commissions argued that the roads must show unreasonableness or discrimination in particular rates, not merely that the state rates have not been raised by the same percentage as the interstate rates.

The railroads based their argument largely on the point that the failure of the authorities of 17 states to allow the full amount of the increase allowed as to interstate rates would reduce the amount of net operating income which the Congress and the federal commission had intended them to have and that if that situation were maintained it would be necessary further to increase the interstate rates and thereby increase the discrimination which they said it is the duty of the federal commission to prevent. The state representatives, on the other hand, took the position that in many cases discrimination would be created by applying the full percentages because some state rates are already higher than some of the interstate rates. This point was especially emphasized by the New York commission as to the effect on the fares of the Long Island, which, it asserted, is purely an intrastate carrier with rates already high as compared with those of the interstate lines.

Arguments were presented by R. V. Fletcher, of the Illinois

Central; C. C. Paulding, of the New York Central, and Francis I. Gowen, of the Pennsylvania, and by the representatives of the New York and Illinois commissions. The closing arguments were made by Mr. Benton and Mr. Thom.

In both states the fares are now on a three-cent basis, in New York by a statute and in Illinois by an injunction restraining the state from enforcing a two-cent fare law. It was stated in the briefs that according to evidence introduced at the hearings the passenger revenue of the Illinois carriers would be \$15,855,453 less on a two-cent fare than on a 3.6 cent fare, and that in New York the reduction in revenue under a three-cent rate as compared with a 3.6 cent rate would be about \$12,000,000. Instances were also cited to show the effect of the difference in inducing the purchase of tickets to points on or near state lines to beat the interstate rates and the effect in reducing through interstate rates.

Over the objection of the Illinois commission, Chairman Clark ruled that the record in the advanced rate case, Ex Parte 74, should be considered as a part of the record in these cases. It was stated that in some states the railroads had objected to the introduction of any other evidence, although in one state they had insisted on the decision of the Interstate Commerce Commission being used instead of the record. Mr. Thom said that copies of the record had been supplied to all the state commissions at a cost of about \$38,000.

When F. W. Putnam of the Minnesota Commission took the position that no evidence had been submitted in the state cases as to the reasonableness of the interstate rate increases, Commissioner Aitchison remarked that the evidence had been sufficient for 31 states. Mr. Putnam also argued that there had been no evidence as to the unreasonableness of the intrastate rates. In reply to a question by Commissioner Hall, he said that the reference in the law to a 6 per cent net operating income meant income from interstate and foreign commerce only.

Mr. Benton, in his argument, said the case involves the momentous issue as to whether the state regulating authorities shall cease to function as the state laws provide and that the carriers are seeking to "wipe the state commissions off the map." He said the carriers ought not to be heard unless they can show that they have exhausted their remedy before the state authorities and that they have not been deprived of their rights merely because some of the state commissions have not allowed the exact increases authorized for interstate rates.

Mr. Thom said that there has been too much jealousy of the federal power, that its exercise is a part of state government and should not be regarded as the act of a hostile organization. The laws of Congress, he said, are the laws of the states in the national field as well as national laws, because they represent the exercise of powers delegated by the states to the federal government. The federal power sprang from the need of the several states to be protected against the narrow or unfair views of other states, he said, and in this case it is the right of the 31 states that have approved of the national policy in respect to transportation and have agreed to bear their portion of the burden to be protected against discrimination on the part of the other 17 states. If the increases are not spread over the state rates the commission must further increase the interstate rates, which would place an increased burden on the 31 states for the benefit of the other 17.

The transportation act, Mr. Thom said, represents a national view of transportation and the law is to be construed to carry out the national conception of transportation written on every page of it. After the state rates have been brought before the commission by a complaint, the commission is authorized to build up the entire rate structure to the standard prescribed by Congress. The cost of supporting the instrumentalities of transportation must be apportioned among all the users fairly.

General News Department

Twenty per cent reduction in the forces of the shops of the Norfolk & Western is to be made at once, according to a notice posted at Roanoke, Va. The reduction, according to the notice, will begin with laborers and helpers.

The Interstate Commerce Commission has issued a partial advance summary of traffic statistics for Class I steam roads for the month of August, covering 158,000 miles of road operated. This shows a total of net ton miles handled during August by these roads of 28,438,000,000, as compared with 23,527,000,000 in August, 1919.

The Interstate Commerce Commission has ordered Class I railroads to report to the commission for July showing for each occupational class the number of employees, the hours or days of service, the amount of compensation on the basis prevailing before July 20, 1920, and the amount of the increase resulting in each class from Decision No. 2 of the Railroad Labor Board.

The St. Louis-San Francisco reports a freight movement for June amounting to 997,794,477 gross ton miles; and for August 1,015,286,540. The record for June was the best month in the history of the road up to that time, 451,259,347 net ton miles; while for August the net ton miles aggregated 465,686,553. The Frisco lines are making constant and steady progress and are meeting with splendid co-operation from shippers and receivers of freight.

The American Association of Railroad Ticket Agents held its second annual convention at Chicago on October 11. Among the speakers were R. M. Allen, vice-president and traffic manager of the Rock Island; L. W. Landman, passenger traffic manager of the New York Central (Chicago), and E. L. Bevington, chairman of the Transcontinental Passenger Association. The principal topic before the meeting was the establishment of better relations between the public and those railroad employees who handle passenger traffic.

The New York State Railroad Commission, second district, reporting a meeting of its special automatic-stop committee, held in Albany on October 6, says that for the present no consideration will be given to mechanical trip or other contact devices, because it is desired to avoid possible complications in the electric zone of the New York Central, which road is the contemplated field of the proposed experimental installation. The committee hopes to come to a decision, as between the several devices which it has examined, by December 1.

A. D. Mutz, an engineman, and one of six men killed at Piedmont, Mont., when 40 cars of a Chicago, Milwaukee & St. Paul train plunged down a grade into a gravel train, died as a result of his efforts to avert the accident, though he was not on duty at the time. He was standing at the station at Piedmont, with his wife, preparatory to boarding a passenger train for Three Forks, Mont., when he saw the runaway cars plunging down the grade. He jumped on the locomotive and started the gravel train into a siding, but before it was clear of the main line the forward car of the approaching runaway crashed into the gravel train.

Uniformity in railway statistics is the aim of the committee appointed by the Association of Railway Executives "to take up with the Bureau of Railway Economics questions of statistics required or furnished by carriers." The personnel of the committee, announced this week, includes J. Kruttschnitt, chairman of the board of directors of the Southern Pacific; A. J. County, vice-president of the Pennsylvania; J. G. Drew, vice-president of the Missouri Pacific; E. P. Bracken, vice-president of the Chicago, Burlington & Quincy; C. L. Bardo, general manager of the New York, New Haven & Hartford;

Geo. A. Harwood, assistant to the president of the New York Central, and C. F. W. Felt, chief engineer of the Atchison, Topeka & Santa Fe. The appointment of this committee was authorized at the meeting of the Association of Railway Executives in Chicago on September 3.

W. W. Gregg, a passenger conductor on the Louisville & Nashville, has secured from the Kentucky Court of Appeals an injunction to prevent his place being taken by a freight conductor who has been promoted in accordance with a decision made by the Railroad Adjustment Board, at Chicago. It appears that the freight conductor is a member of the Order of Railway Conductors, and that Gregg is not; and the appeal to the court is on the ground that the action of the Adjustment Board is unduly favorable to the brotherhood and to the seniority rules embodied in the contract or agreement between the railroad company and the brotherhood. The court seems to have decided the question primarily on the ground that the Adjustment Board had authority only to pass upon disputes submitted before federal administration ceased and therefore had no jurisdiction in this case, which was filed after that time. As to the seniority rule, the judge thought it could not be invoked by a freight conductor to displace a passenger conductor.

A. S. C. E. Nominees

The Nominating Committee of the American Society of Civil Engineers has selected the following ticket for offices to be filled at the annual meeting on January 19, 1921. President, George S. Webster; consulting engineer, Philadelphia; vice-presidents, Andrew M. Hunt, consulting engineer, New York City, and Edward E. Wall, water commissioner, City of St. Louis; treasurer, O. E. Hovey, assistant chief engineer, American Bridge Company, New York City. Among the directors nominated is Frank T. Darrow, assistant chief engineer of the Chicago, Burlington & Quincy, Lincoln, Neb.

N. R. A. A. Board of Directors Meet

The Board of Directors of the National Railway Appliances Association met in Chicago on October 4 to plan for the exhibit which will be held at the Coliseum, Chicago, next March, simultaneously with the convention of the American Railway Engineering Association. Although invitations to apply for space were only sent to the members in July, more applications have already been received than at this time in any previous year. Other manufacturers contemplating exhibiting are urged to send in their applications promptly, and in any event before November 6, as space will be allotted at that time. In view of the prospects for more than the usual demand, the Board of Directors has in contemplation plans which will increase the amount of floor space available.

Nebraska Enlarges Powers of Commission

The Commission regulating public utilities of the state of Nebraska was given largely increased powers by special vote of the people on September 21, some 41 amendments to the state constitution having been adopted at this election. One of them provides that every public utility corporation or common carrier doing business in Nebraska shall report, under oath, to the commission on all such matters as it may require. This amendment was opposed by municipal ownership advocates because it will enable the commission to require municipally-owned corporations to make reports on the same forms as other utilities. This amendment was carried by vote of four to one. Another amendment creates an industrial commission similar to that of the state of

Kansas, which is intended to provide a means by which strikes may be prevented in the public service. This commission may require the submission to it of all such controversies where the public is endangered, and is empowered to determine the issues of the controversy.

The A. S. C. E. Votes on Proposed

Constitutional Amendments

Of the seven proposed amendments to the constitution of the American Society of Civil Engineers, the four amendments designated as A, B, F and G, and opposed by the more progressive members of that society, were defeated by a narrow margin of from 224 to 448 votes out of a total of about 4,500. These amendments were opposed chiefly because of the fact that they were vague and uncoordinated and that though introduced in an endeavor to democratize the society they tended toward the establishment of a political machine in which the average member would probably have taken but little interest. The other three amendments, designated as C, D and E, and relating to dues, honorary membership, etc., were carried.

The A. R. E. A. and the Proposed Federated Societies

The Board of Direction of the American Railway Engineering Association at its meeting, October 11, 1920, resolved against the invitation of the Federated American Engineering Societies to become a charter member of that body. In brief the resolution stated that the A. R. E. A., believing in the co-operation of engineering societies, had become a member of Engineering Council and that the work of the latter body had been of great benefit. Furthermore, the Board of Direction did not believe that the work of the Engineering Council should be interrupted or jeopardized by the formation of a new organization, as a result of which Engineering Council would be disbanded and its work turned over to a new body. It was, therefore, resolved that the American Railway Engineering Association "does not deem it advisable to become a member" of the proposed federated society and that the association "continue its membership in Engineering Council."

Farmers' Views Solicited by Illinois Central

President C. H. Markham, of the Illinois Central, has further developed his plan of co-operation with the patrons of his line by sending a personal representative to interview farmer patrons in regard to their views and needs. The first of these direct interviews has just been reported from Cherokee county, Iowa. The interviewer says that the farmers in this county thought first of the car shortage, although in general the railroad management was not blamed for the shortage.

All of this material has been accurately reported, regardless of what the persons who were interviewed had to say, and will be circulated throughout the territory served by the Illinois Central and among all of the employees of that line. In discussing the principles behind this work, Mr. Markham said that "the highest degree of railroad service cannot be given unless the officers and employees of the railroad understand the problems of those whom the railroad serves, and unless those whom the railroad serves, in turn, understand the problems of the railroad."

A Definition of "Engineer"

A committee of the American Association of Engineers, consisting of George W. Hand, assistant to the president, Chicago & North Western, and Chairman of the National Railroad Council of A. A. E., J. B. Jenkins, valuation engineer of the Baltimore & Ohio; C. C. Burritt, office engineer of the Southern Railway and R. C. Bailey, district secretary of the association in Washington, presented to the Interstate Commerce Commission on October 1, a request for a new definition of the term "engineers of mechanics." The definition recommended by the committee is as follows:

"The American Association of Engineers recommends that there shall be included in the group within the term 'subordinate officials' the following:

"Technical Engineers. This class shall include all professional engineers, assistant engineers, engineer assistants, instrument-

men, rodmen, chairmen, designers, draftsmen, computers, tracers, chemists, architects, engineer supervisors, engineer inspectors, and all other employees engaged in office or field work in any department and performing engineering work. None of the foregoing who have authority to employ, discipline or dismiss subordinates shall be included."

Strangling the Railroads Because It Is Convenient

Railway freight and passenger rates can be held down; prices of other things usually cannot. This brief and pungent explanation of "the railroad problem," as it exists in many places,

Your Railways and the Cost of Living

BEFORE the privy council at Ottawa protest against the new railway rates has been made on the grounds that the giving of the new rates would raise the cost of living by a percentage many times higher than the percentage actually charged by the Canadian Railways.

It was pointed out that the numerous middlemen who act as the distributors of goods would each add his percentage of profit to the freight rate, so that although the railways might only receive say 40 cents additional freight charge on a shipment the public would be forced, by the distributing middlemen, to pay many times that amount.

The managements of the various Canadian railways desire, through this, their association, to draw the attention of newspaper readers to the highly significant fact that the recent increase in United States Railway rates—an increase similar to the increase in Canada—has actually been followed by a decrease in the cost of living in that country.

Furthermore,

A great Canadian manufacturer recently made public—without any solicitation and without the previous knowledge of the railway managements—figures which proved that the retail selling price of a yard of plain white cloth in Winnipeg, after being hauled from Montreal to Toronto and Toronto to Winnipeg, would be increased only one-half a cent, even after the wholesaler had added 20 percent, profit to the new freight rate and the retailers another 50 percent.

He showed that these distributors, whether rightly or wrongly, added 15 cents to his mill-price of 16 cents per yard.

Yet the railways carried the raw cotton for this yard of goods from Texas to Montreal, and the finished goods from the mill to Toronto and Toronto to Winnipeg for one and one-half cents.

One and one-half cents as against fifteen cents.

We venture to believe that, whatever the explanation or the justification may be, the same serious addition to cost by the distributing trades will be found in relation to almost every article of common household use.

This is not to attack distributors. They may, themselves, be victims of a bad system or of an overcrowded trade. But it is to point out that if they add whatever percentage they, as a trade, find convenient, on top of the freight rates the railways cannot help either themselves or the public. The oppressive results of these practices should not be charged against the railway managements, nor cited as reasons for holding freight rates down merely because railway rates can be held down while other prices soar as the various trades find necessary.

RAILWAY charges always must be a serious item in determining cost of production, but the managements of your railways urge upon your attention this fact: That antiquated, overloaded and wasteful systems of distributing goods are much more properly a subject for public anxiety.

Canada cannot prosper without prosperous railways. Canadian Railways cannot prosper unless Canada prospers.

Beware of those who would restrict and even strangle the railways of Canada simply because cost exists there and is not so convenient in other departments of commercial activity.

The Railway Association of Canada

263 St. James Street - - - Montreal, P. Q.

One of the Advertisements Now Appearing in Canadian Newspapers

is a salient feature of a manifesto which has been issued by the railroads of Canada, and which appears in current issues of Canadian newspapers. A facsimile of one of the advertisements reduced in size, is given herewith.

The Superpower System

At a meeting of the New York Electrical Society held on October 7 at 29 West 39th street., New York, William S. Murray, chairman of the Superpower Survey, organized by the United States Government, outlined the progress which has been made by his organization.

The boundaries of the zone have been extended to include a little more of the Northeast Atlantic seaboard and the total area of the zone is now about 60,000 sq. mi., or about 2 per cent of the total area of the country.

As originally outlined, the Superpower System would provide an estimated machine capacity of 17,000,000 h. p., of which about 10,000,000 would be used for industrial purposes and 7,000,000 for the railroads. The total amount of machine capacity is now estimated to be somewhat in excess of this amount.

With the aid of lantern slides Mr. Murray outlined the advantages which would be gained by such a system. He pointed out that the average steam engine load factor is 10 per cent, that existing central stations have a load factor of about 30 per cent and with such a superpower system a 50 per cent load factor should be possible.

Both steam and water power plants will be used to develop the power required, about 15 per cent of which will be water power. This percentage will shrink as the total power demands grow. The power plants under consideration will develop from 300,000 to 400,000 kilowatts each. The average station now operating in this area has a kilowatt capacity of 3,000 and uses 4.7 lb. of coal per kilowatt hour.

In speaking of the trunk line railroads, which will receive power from this system, Mr. Murray pointed out that electric traction must be warranted by density of traffic and tunnel and terminal conditions. He expressed the opinion that not more than 25 per cent of the steam railroads in this area would be electrified for a long time to come, and that both alternating current and direct current will be used.

Work Begun on Consolidation Plan

The Interstate Commerce Commission has begun consideration of a tentative plan for the consolidation of the railroads into a limited number of systems in accordance with the terms of the transportation act. Prof. William Z. Ripley, of Harvard University, has been retained to assist the commission in working out such a plan and has been engaged on the work for about a month, reporting to Commissioner H. C. Hall. It is understood that one of the first phases of the work is a collection and examination of the various plans which have been worked out by various individuals or committees. The Senate railroad bill contained a plan for compulsory consolidation of the railroads into a limited number of systems, but this was changed by the conference committee which finally wrote the transportation act to a provision that the Interstate Commerce Commission shall as soon as practicable prepare and adopt a plan for the consolidation of the railway properties of continental United States into a limited number of systems so organized that competition shall be preserved as fully as possible and that, wherever practicable, the existing routes and channels of trade and commerce shall be maintained. Subject to the foregoing requirements, the law provides that the several systems shall be so arranged that the cost of transportation as between competitive systems and as related to the value of the properties through which the service is rendered shall be the same so far as practicable, so that these systems can employ uniform rates in the movement of competitive traffic and under efficient management earn substantially the same rate of return upon the value of their respective railway properties. When the commission has agreed upon a tentative plan, it is to give the same due publicity and upon reasonable notice, including a notice to the governor of each state, hear all persons who may file or present objections thereto. The commission is authorized to prescribe a procedure for such hearings. After the hearings it is to adopt a plan for such consolidation and publish it, but it may at any time thereafter, upon its own motion or upon application, reopen the subject for such changes or modifications as, in its judgment, will promote the public interest. The voluntary consolidations on application of the railroad companies, as provided elsewhere in the law, are required to be in harmony with the commission's plan.

AT THE REQUEST of J. H. Townsend, secretary and manager of the Southern Hardwood Traffic Association, a meeting of the general superintendents of the railroads operating in the southern territory was held at St. Louis on October 6, to discuss co-operation in an effort to expedite the handling of logs to the mills and the movement of lumber outbound. At this meeting it was agreed to allow the Southern Hardwood Traffic Association to decide on what basis the mills should be rated, and the amount of each day's cut will be decided after a conference with the Southern Pine Association.

Traffic News

William G. McEdward, division freight agent of the Pere Marquette, with headquarters at Bay City, Mich., has resigned from railroad service.

Resolutions declaring the freight rates on ice are "excessive" and result in an "unjust" charge to the consumer were adopted at the closing session of the annual convention of the National Association of Ice Industries at St. Louis, on October 7.

The Railroad Commission of Kentucky has authorized the American Railway Express Company to make a general advance of 13.5 per cent in rates for the transportation of merchandise. This, with a previous advance, makes a total increase of 26 per cent in 1920.

The Louisiana Railroad Commission has authorized the American Railway Express Company to increase its Louisiana intrastate rates in the same measure and to the same extent as authorized on interstate traffic by the Interstate Commerce Commission. The increase is about 12½ per cent.

The Board of Railroad Commissioners for Canada has issued an order under which the Fuel Administration of any province, after due notice, may seize carloads of coal not unloaded within six days and sell the same to the municipality or to the dealer offering the highest price therefor.

The Chicago, Burlington & Quincy, the Chicago, Rock Island & Pacific, and the Great Northern, have announced the opening of a joint city ticket office at 524 Second Ave., South, Minneapolis, Minn., effective September 27. J. F. McElroy, joint agent, will have charge of the office.

A Farm Marketing Bulletin has been issued by the Seaboard Air Line for the benefit of agricultural interests along the road, and it is proposed to issue the sheet monthly. Information is given concerning state fairs in Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama. The Bulletin is to be posted in the stations of the road and other prominent places.

The use of tickets interchangeably between the Pennsylvania Railroad on the one hand and the Philadelphia & Reading and the Central of New Jersey on the other, is to be discontinued at the end of this month. Tariffs announcing the change have been issued, to take effect November 1 on certain sections, and November 5 on other sections. After these dates the tickets of each road will be accepted only on its own trains.

With a shortage in California of 1,249 refrigerator cars and the demand in other states reported as increasing rapidly, the refrigerator department of the American Railroad Association, Car Service Section, has taken drastic steps to meet the situation. All railroads in California have been notified to serve notice on dealers that those holding shipments in excess of five days will have an embargo placed against further business for their account until they make satisfactory arrangements to release cars promptly.

Coal Production

The production of bituminous coal fell off sharply during the week ended October 2, according to the weekly bulletin of the Geological Survey. The output is estimated at 11,348,000 net tons, a decrease as compared with the preceding week of 506,000 tons. The bulletin says the cause of the decrease is not yet clear. The total production during the first 234 working days of the year has been 404,114,000 net tons, an increase of 51½ million tons as compared with 1919 and a decrease of about 45¼ million tons as compared with 1918. No recovery in the dumpings at Lake Erie ports was reported during the week. The cumulative lake movement from the opening of the season now stands at 15,749,000 tons as against 22,822,000 in 1918 and 19,174,000 in 1919. The movement to tidewater increased again during the week of October 2, but the all-rail movement of coal to New England again fell below the 1919 level.

Commission and Court News

Interstate Commerce Commission

The commission has suspended until February 8, the operation of increased rates on sulphur, l. c. l. from Byron Mound, Freeport, Gulf Hill and Damon, Tex., to Beaumont and Port Arthur for export.

The commission has suspended until February 8, the operation of an exception to the Western Classification, providing for the elimination of the application of class C rating on ginger ale, c. l., and in mixed carloads with other beverages, between points in Texas, and from Shreveport, La., to Texas destinations, leaving the rating provided for in the Western Classification applicable instead.

The Commission has suspended until February 6, the operation of a supplement to a Pennsylvania tariff which provides for the cancellation of the existing proportional class arbitrary rates from Norfolk, Va., to United States Naval Operating Base, Hampton Roads, Sewalls Point, Va., applicable on l. c. l. traffic from points on the Pennsylvania Railroad and connecting lines in eastern territory, leaving local rates applicable instead.

The commission has announced a hearing at Salt Lake City on November 1 before Examiner W. A. Disque on the refusal of the Utah Public Utilities Commission to permit increases for intrastate traffic similar to those permitted by the federal commission for interstate traffic. The rates in question are those on coal and ore and on passengers where the present fares are in excess of 3 cents a mile; also passenger fares on electric lines.

The railroads have filed with the Interstate Commerce Commission tariffs providing for a general increase in demurrage rates, as agreed upon with a committee representing the National Industrial Traffic League, which the commission is asked to make effective on five days' notice. It is proposed that the general demurrage charge on all cars after expiration of free time shall be \$3 for each of the first four days, \$6 for each of the next three days and \$10 for each succeeding day, and that under the average agreement after a car has accrued four debits the charge will be \$6 for each of the next three days and \$10 per day thereafter; debits which are not offset by credits will be charged at \$3 each.

State Commissions

The Railroad Commission of Louisiana, by Order No. 2,359, following an examination of a tariff issued by the Louisiana & Arkansas, cancelling certain l. c. l. commodity rates without authority, and without authority therefor under the decisions of the Interstate Commerce Commission in the "Natchez Case," imposes a fine of \$5,000 on the railway company.

The Illinois Public Utilities Commission on September 29 ordered all railroads to give priority to the transportation of coal into Chicago; coal will take precedence over all freight except livestock, and the mines are to have first call on open-top cars. This action has been supplemented by the United States District Attorney, who has warned all labor unions engaged in any way in handling coal, that strikes would bring about federal prosecution.

Personnel of Commissions

Wilbur LaRoe, Jr., has resigned as chief examiner of the Interstate Commerce Commission.

Robert E. Quirk, now assistant director of the Bureau of Service of the Interstate Commerce Commission, has been appointed chief examiner, succeeding Wilbur La Roe, Jr., resigned. Mr. Quirk has been connected with the commission for nine years and has served in various departments.

Court News

Liability for Misinformation as to Train Time

A passenger who had been misinformed as to the time of departure of a train and as a result had missed the train, procured an automobile and, wearing inadequate clothing, drove across country on a cold, stormy night, suffering discomfort and inconvenience. The North Dakota Supreme Court holds that he was not entitled to recover damages for the discomfort and inconvenience, as the negligent or wrongful act of the railroad was not the proximate cause thereof. At the time the information was given it was correct, but the departure of the train before the time stated was caused by a subsequent change of orders by the train despatcher. The company's employees did what they could to communicate the change to intending passengers. There was therefore no basis for a finding of oppression, fraud, or malice.—*Weeks v. Great Northern (N. Dak.)* 175 N. W. 726.

Safety Appliance Act—Switching or Train Movements

In an action for penalties for four alleged violations of the air brake provision of the federal Safety Appliance Act by moving four cuts of cars without having the air brakes coupled and under control from the engine, the Circuit Court of Appeals, Fifth Circuit, holds that testimony tending to show that in the opinion of the witnesses it was safer for the trainmen to handle the trains with the air brakes uncoupled, and that it would cause the railroad great inconvenience and delay to comply with the law was inadmissible, as were printed copies of railroad rules tending to show that the movements of the cars in question were interpreted by the defendant to be switching movements, not covered by the law, and not requiring the air brakes to be coupled; this evidence being held irrelevant and immaterial because under the facts, as interpreted by the court, the movements of the cars were train movements and covered by the act.—*Galveston, Houston & Henderson v. United States*, 265 Fed. 266.

Liability for Crossing Flagman's Negligence

In an action against a railroad by an automobile passenger who was injured at a crossing after having been signaled by the railroad's flagman to cross, the Indiana Appellate Court holds that in such an action the railroad cannot be held liable because it employed or retained in its employment an incompetent flagman; that the only liability it owed the plaintiff was to respond in damages for the flagman's negligence.—*L. E. & W. v. Griswold (Ind.)* 125 N. E. 783.

In an action against the railroad, arising out of the same circumstances, for damage to the automobile, it is held that where a railroad company employs a flagman as required by an ordinance, and he negligently signals to a traveler to cross when an approaching train is so close that the traveler cannot by exercising ordinary care avoid being struck, his negligence is chargeable to the railroad.—*L. E. & W. v. Sanders (Ind.)* 125 N. E. 793.

Decisions Under Federal Employees' Liability Act

The Circuit Court of Appeals, Second Circuit, holds that a foreman of a wrecking train crew employed in connection with interstate commerce, required before leaving his train at night to prepare it for immediate service, remains in the interstate employment until the day's work is finished by completing preparation.—*Director General of Railroads v. Ronald*, 265 Fed. 138.

A member of a train crew, whose run was from a point in another state to Chicago, had eight hours off duty in Chicago and returned with another train. He was killed during the eight-hour period while sleeping in the caboose, which was being transferred from one point to another in the Chicago yards. The Circuit Court of Appeals, Seventh Circuit, holds he was not at the time employed in interstate commerce within the act.—*Bishop v. Delano*, 265 Fed. 263.

The Kentucky Court of Appeals holds that the fact that an employee when injured was assisting in loading old rails on a car for shipment after having been sold, does not show that he was employed in interstate commerce.—*Illinois Central v. Probus (Ky.)* 218 S. W. 724.

Foreign Railway News

Extension of Railways in Morocco Planned

An agreement has been entered into between the Moroccan protectorate and a group made up of the Paris-Lyons-Mediterranean and the Paris-Orleans railways, the Compagnie Generale of Morocco and the Compagnie Marocaine for the construction of a 1.44 meter gage railway in Morocco at a cost of approximately 970,000,000 francs (about \$194,000,000 par).

New Uruguay-Argentina Line Proposed

A project to build a railway from Montevideo direct to Colonia, where a ferry service to Buenos Aires would be inaugurated, is being seriously considered by the Administrative Council of Uruguay, according to a report from Vice Consul S. H. Avery at Montevideo. It is pointed out that this project would not only reduce the transportation expense between the two cities but that a saving in time of four hours would be effected.

South Manchuria Railway

LONDON.

The South Manchuria Railway Company proposes to spend on improvements during the next five years the sum of \$32,544,000, as follows: \$12,898,000 for double tracking and other improvements between Mukden and Changchun; \$16,290,000 for locomotives and cars; \$600,000 on alterations of couplings for use in connection with the Chinese railways; and \$2,756,000 for extension of the present buildings, warehouses, etc.

Huge Credits Granted for New Lines in Japan

Although the Railway Department of Japan failed to secure the Diet's approval of its project for extensive electrification, new credits of 155,000,000 yen (about \$77,500,000) for the construction of 224 miles of new lines of the regular 3 ft. 6 in. gage, and 400,000,000 yen (about \$200,000,000) for 772 miles of light railway were approved. The railway authorities intend to bring up the electrification project again at the next session.

Chilean State Railways Poorly Equipped

Reports from Valparaiso say that the Chilean State Railways have reached their maximum carrying capacity, which meets about half of the transportation needs of the country. Owing to the difficulty of negotiating a foreign loan for the purchase of equipment abroad, the government is being urged to stimulate the manufacture of railway supplies in Chile. It has been about eight years since new equipment in large quantity has been purchased. In the meantime needs for new rolling stock to provide for additional business and for deteriorated equipment have grown apace.

School for Railway Employees in Berlin

BERLIN, Germany.

A school for railway employees was founded in Berlin about a year ago and the first annual meeting was held on July 15, 1920. At this meeting it was stated that owing to the success of this school, 20 branch schools were opened in the Prussian-Hessian railroad district during the year and that about 18,000 pupils are registered. It is planned to open a further 36 schools in the near future. It is the aim of the school to give all progressive employees the possibility of further education. It therefore has established courses on general educative subjects given by well-known teachers of high schools and universities, and in addition special courses on railway matters. As both the workers and the employees' trade unions are in favor of and are co-operating in the scheme, the government has declared its willingness to promote and further the movement as far as possible.

Exports of Steam Locomotives in August

The exports of steam locomotives in August totaled 125, valued at \$5,424,588. Of these 32, valued at \$1,857,000, were destined for Belgium, and 32, valued at \$1,123,722, for Cuba. The detailed figures by countries, as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

| Countries | Number | Dollars |
|--------------------------|--------|-----------|
| Belgium | 32 | 1,857,988 |
| Poland and Danzig | 3 | 139,500 |
| Roumania | 15 | 975,000 |
| Spain | 15 | 656,580 |
| Canada | 1 | 15,368 |
| Honduras | 1 | 3,700 |
| Mexico | 6 | 70,500 |
| Jamaica | 1 | 21,800 |
| Cuba | 32 | 1,123,722 |
| Brazil | 5 | 98,290 |
| Chile | 1 | 8,400 |
| Colombia | 2 | 63,940 |
| Philippine Islands | 1 | 21,800 |
| French Africa | 10 | 368,000 |
| Total | 125 | 5,424,588 |

China Standardizing Its Railways

The Chinese Ministry of Communications is making good progress in determining standards for the government railways of that country. The Commission on Railway Technics was organized in 1918 to make observations and recommendations regarding standards for all phases of railway work. It is expected that, once uniform materials and equipment are decided upon, those manufacturers who can supply the specified materials most efficiently will secure the Chinese trade. The Ministry desires to have some of the railway supply industries locate in that country if possible.

Exports of Car Wheels and Axles in August

The exports of car wheels and axles in August had a total value of \$469,413. The largest shipments were to Japan, Scotland, Cuba and Canada, in the order named. The detailed figures by countries, as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

| Countries | Dollars |
|---------------------------------|---------|
| Denmark | 286 |
| Greece | 266 |
| Italy | 18,415 |
| Spain | 32,262 |
| Scotland | 64,593 |
| Canada | 48,316 |
| Costa Rica | 2,585 |
| Honduras | 54 |
| Nicaragua | 44 |
| Panama | 1,859 |
| Salvador | 348 |
| Mexico | 588 |
| Newfoundland and Labrador | 1,400 |
| Jamaica | 85 |
| Cuba | 62,355 |
| Dominican Republic | 1,314 |
| Argentina | 17,299 |
| Bolivia | 700 |
| Brazil | 10,260 |
| Colombia | 46 |
| Peru | 989 |
| Uruguay | 581 |
| China | 30,000 |
| British India | 2,840 |
| Other British East Indies | 131 |
| Japan | 91,610 |
| Australia | 39,765 |
| New Zealand | 528 |
| Philippine Islands | 12,364 |
| British South Africa | 530 |
| Egypt | 27,000 |
| Total | 469,413 |

Railway Rates Increased in Korea

LONDON.

At the end of the last financial year the government lines in Korea showed a deficit of about \$160,000, and it was estimated that the loss for the current year would amount to about \$800,000 unless steps were taken to provide an increased revenue. The authorities decided, therefore, to increase the rates. Accordingly, the freight rates were raised from 10 to 30 per cent in most cases, and to 50 or 60 per cent in the case of goods of high market value. Special rates were provided for animals, dangerous goods (kerosene), vehicles, explosives, etc. Passenger fares were increased from 25 to 40 per cent and storage charges from 30 to 100 per cent.

The Market for Cars in Cuba

That Cuban sugar mills are large owners of rolling stock is pointed out by Trade Commissioner H. A. Chisholm in a recent report to the Canadian Department of Trade & Commerce from Havana. There are 193 sugar mills operating now in Cuba and it is estimated that they own 15,000 cane cars and 600 locomotives. Most of the railway lines operated by these mills are of standard gage. American cars are favored in the Cuban tariff by a reduction of the ad valorem duty from the 31.25 per cent, which manufacturers of other nations must pay, to 11.25 per cent. This gives American manufacturers a decided advantage over foreign competitors. Some Cuban railways are, however, under British control and there is a disposition to favor British bidders when it can be done without increased cost.

Exports of Railway Track Material in August

The exports of rails in August totaled 56,160 tons, having a value of \$3,661,174; of spikes, 2,699,131 lb., of a value of \$114,213; and of switches, frogs, splice bars, etc., of a value of \$566,710. The detailed figures by countries as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

| Countries | Spikes | | Steel rails | | Switches, frogs, splice bars, etc. |
|---------------------------|-----------|---------|-------------|-----------|------------------------------------|
| | Pounds | Dollars | Tons | Dollars | |
| Denmark | | | | | 11,351 |
| Finland | | | | | 357 |
| France | | | | | 2,659 |
| Greece | | | 1,316 | 79,872 | 7,940 |
| Roumania | | | | | 1,749 |
| Spain | | | 118 | 6,913 | 2,321 |
| Sweden | | | 4,465 | 306,000 | |
| England | | | 2,838 | 145,309 | 11,163 |
| Ireland | | | 120 | 7,743 | |
| Bermuda | 200 | 23 | | | |
| British Honduras | 2,200 | 125 | | | |
| Canada | 7,963 | 340 | 2,588 | 125,740 | 36,478 |
| Costa Rica | | | | | 73 |
| Guatemala | 12,852 | 792 | | | |
| Honduras | 58,855 | 2,775 | 788 | 43,887 | 651 |
| Nicaragua | 11,885 | 787 | 113 | 6,780 | |
| Panama | | | | | 3,118 |
| Salvador | 20,000 | 1,140 | | | |
| Mexico | 210,964 | 10,970 | 362 | 19,197 | 46,985 |
| Jamaica | | | | 4,148 | 1,934 |
| Cuba | 1,299,875 | 51,862 | 9,348 | 562,437 | 150,331 |
| Dutch West Indies | 5,836 | 800 | | | |
| French West Indies | 1,600 | 121 | | | |
| Dominican Republic | 10,315 | 508 | 107 | 7,200 | 27,848 |
| Argentina | | | 2,882 | 176,034 | |
| Brazil | 401,600 | 14,608 | 5,220 | 351,340 | 15,838 |
| Chile | 11,090 | 599 | 212 | 16,987 | 541 |
| Colombia | 3,600 | 206 | 108 | 5,384 | 3,965 |
| Ecuador | 10,000 | 860 | | | 5,811 |
| British Guiana | | | 200 | 17,500 | 264 |
| Paraguay | | | 385 | 23,427 | 1,053 |
| Peru | 53,120 | 2,984 | 126 | 8,666 | 7,793 |
| Uruguay | | | | | 5,024 |
| Venezuela | | | | | 566 |
| China | 47,016 | 1,549 | 169 | 12,221 | 3,328 |
| Kwantung | 22,896 | 893 | 284 | 19,362 | 743 |
| British India | 34,000 | 1,700 | 833 | 43,344 | 2,497 |
| Straits Settlements | | | 756 | 49,679 | 21,626 |
| Other British East Indies | | | | | 378 |
| Dutch East Indies | 51,755 | 4,420 | 3,587 | 258,416 | 67,663 |
| Japan | 412,977 | 15,818 | 13,717 | 963,584 | 72,542 |
| Australia | | | | | 22,032 |
| New Zealand | | | | | 230 |
| French Oceania | | | | | 247 |
| Philippine Islands | 8,532 | 333 | 865 | 57,848 | 22,298 |
| British South Africa | | | 104 | 7,775 | 6,392 |
| Portuguese Africa | | | 401 | 22,019 | 1,013 |
| Total | 2,699,131 | 114,213 | 56,160 | 3,661,174 | 566,710 |

Well Known English Railway Engineer Dies

LONDON.

The late Sir James Benjamin Ball, chief engineer of the London, Brighton & South Coast Railway, who died September 16, was appointed to this position in February, 1917. He joined the staff of the Great Northern in 1890 and subsequently assisted in the construction, among other works, of the Lancashire, Derby & East Coast Railway. In 1899 he became engineer of this railway, which position he held until the line was absorbed by the Great Central, on the staff of which he was appointed assistant engineer (new work) in January, 1907. In 1911 he was made engineer-in-chief of the Great Central. During his service with the Great Central, Sir James Ball was responsible for a large amount of new construction. In 1917 he was appointed controller of timber supplies and in 1918 he received the honor of knighthood in recognition of his services.

Exports of Cars in August

Steam railway freight cars, 2,643 in number, of a value of \$4,181,391, were exported from this country in August. Of these 1,700 valued at \$2,425,000 went to Poland and Danzig. For railways other than steam lines, 410 cars valued at \$320,477 were shipped from American ports. Of these the greatest number, 149, went to Cuba. Exports of car parts were valued at \$1,611,825. No passenger cars were exported. The detailed figures by countries, as compiled by the Division of Statistics of the Bureau of Foreign and Domestic Commerce, are as follows:

| Countries | Freight and other | | Steam | | Parts of cars, Dollars |
|-------------------------------|-------------------|-----------|-------|---------|------------------------|
| | No. | Dollars | No. | Dollars | |
| France | | | | | 31 |
| Poland and Danzig | 1,700 | 2,425,000 | | | 200 |
| Spain | | | | | 730,935 |
| England | | | | | 16,331 |
| Yugoslavia, Albania and Fiume | | | | | 386 |
| Canada | 99 | 148,967 | 83 | 146,282 | 60,590 |
| Salvador | | | | | 27,443 |
| Mexico | 26 | 27,925 | 8 | 780 | 3,957 |
| Newfoundland and Labrador | | | | | 2,514 |
| Jamaica | 8 | 2,400 | | | |
| Trinidad and Tobago | | | 1 | 1,431 | |
| Cuba | 366 | 637,713 | 149 | 94,699 | 126,368 |
| Haiti | | | | | 29 |
| Dominican Republic | 2 | 2,490 | 26 | 14,337 | 17,737 |
| Argentina | | | | | 21,145 |
| Bolivia | | | | | 876 |
| Brazil | 30 | 169,760 | 1 | 14,200 | 33,755 |
| Chile | | | 1 | 2,044 | 27,033 |
| Peru | 12 | 7,136 | | | 1,629 |
| Uruguay | | | | | 5,166 |
| China | | | | | 194,123 |
| Kwantung | | | | | 15,683 |
| British India | | | | | 18,413 |
| Other British East Indies | | | | | 13,940 |
| Dutch East Indies | | | 135 | 8,910 | 1,737 |
| Hongkong | | | | | 152,629 |
| Japan | | | | | 1,018 |
| Australia | | | | | 54,798 |
| British South Africa | | | 6 | 37,794 | 83,359 |
| Egypt | 400 | 760,000 | | | |
| Total | 2,643 | 4,181,391 | 410 | 320,477 | 1,611,825 |

Military Disturbances Upset

Chinese Railway Operation

PEKING, August 15, 1920.

At the beginning of July the operating revenues of the Chinese Government Railways showed an increase of about \$6,000,000, or at the rate of about 15 per cent for the year. All of that increase, and more, has been wiped out by the disturbances of the past six weeks.

The impending cabinet reorganization, reported in May, developed through June into an *impasse*. By July 1, troop movements in all directions toward Peking were requiring a considerable portion of railway equipment. By July 10, Peking was practically under siege. Five days later passenger service on both the Peking-Mukden and Peking-Hankow lines was suspended on account of fighting. Simultaneously, the Shanghai-Nanking line was broken by troops endeavoring to create a diversion in favor of the besieged Peking party, and about July 20 the Tientsin-Pukow line was cut south of Tienchow to protect the arsenal there from Shantung forces favorable to Peking. The Peking-Suiyuan line was commandeered by the military from the first, but some civilian traffic was carried sporadically from time to time.

According to the Boxer Protocol, the Peking-Mukden line must be kept open from Peking to the sea (Shanhaikuan). Accordingly, after two or three days' interruption, the foreign military authorities in Tientsin formed a "military special" and attempted to run through to Peking. But the first two or three attempts took them not further than 20 miles. In the meantime, a foreign adviser of the Ministry of Communications, assisted by a secretary of the British Legation, brought two trains through from Peking. A special in the opposite direction which started immediately afterward was wrecked in collision with a military train running "wild." During the following week, military "foreign specials" were forced through to Peking, and at least one train a day each way has been run since. At the present writing, the Peking-Mukden is running about half its regular passenger service, and a minimum of freight service. At one time Chingwangtao harbor was full of ships tied up for lack of coal.

The Shanghai-Nenking break was repaired within a few days. The damage is estimated at only \$150,000. The Tientsin-Pukow

remained out of commission on the northern section for nearly two weeks. But the Peking-Hankow and the Peking-Suiyuan are not running through trains yet.

The quarrel which has occasioned all of this disturbance is variously described. It is between an alignment of leaders—one denominated as the "Anfu Club" and the other as the "Chihli faction." The Anfu Club has been held responsible in popular opinion for the weakness of the Chinese Government in the face of Japan. Its higher members were the men supposed to be getting rich on Japanese money secured by "secret agreements." The ex-minister of communications who was driven from office last year was a member. His successor became the treasurer of the Anfu Club. Japanese officers were instructors in the "Frontier Defence Army," which was principally the Anfu Club army. Upon the defeat of the Anfu forces, their principal leaders fled to the Japanese Legation for protection. The other legations refused to receive any Chinese for protection. The Japanese Legation denied the presence of these men for over two weeks. But the Chihli commanders posted armed forces at every entry to the Legation Quarter, and nailed up pictures of ten of the "wanted" Anfu leaders with instructions to scrutinize every passerby. Finally, during the past week the Japanese Minister in a formal letter to the foreign office has admitted the presence of nine of the ten men.

Among the "wanted" men is the minister of communications, Tseng Yu-chun and Ting Shih-yuan, director-general of the combined Peking-Hankow, Peking-Suiyuan lines. It is alleged that the former is short in his accounts by several millions. The director of the railway department, Y. C. Whang, was kept under guard in the ministry for about a week and made to give an explanation of all items during an audit of the ministry's accounts. The results of this audit have not been made public.

NEW CABINET ANNOUNCED

A new cabinet has just been announced. As minister of communications, Yeh Kung Cho is an excellent appointment. He has twice been vice-minister, is responsible for the unification of accounts and standardization of equipment and engineering standards, now under way, and was technical delegate to the peace conference. Many Americans in New York, San Francisco, and other cities will remember meeting him, with Dr. C. C. Wang, as they were proceeding to Paris. A constructive program is expected to proceed from this appointment.

One of the first acts of the new administration is to revoke the order amalgamating the Peking-Hankow and the Peking-Suiyuan lines. They have, in fact, been operated as separate lines all the time, and the accounts have been merged only as a total. It is expected that a careful audit of the accounts of these two lines will next be ordered, and certain questionable contracts for materials may be the subject of review.

SHORT OF MONEY

In the meantime, the ministry of communications is undoubtedly in close quarters for money. The Anfu officers drew upon the lines to the last dollar possible before they were ousted. During hostilities, the Chihli forces sent an armored car up and down the Peking-Hankow line collecting from the stationmasters en route. Heavy interest payments and loan installments are due in October. It is probable that some sort of loan financing will have to be resorted to as a temporary shift.

It is reported that the American adviser to the ministry of communications, John Earl Baker, has been re-engaged for a term of three years.

The efforts of Japanese interests to get access to the coal and iron deposits of Shansi have been referred to in these notes several times. The latest development has occurred in the south of that province. Ore is now being taken out by mules to the Yellow River some 70 miles to the south, and shipped in barges to Tsinanfu, where it is loaded for Tsing Tau via the Shantung railway. To mask the forces behind it, German engineers are in charge, claiming themselves to be Finns. One of these men became seriously ill and the nearest physician was an American missionary, who before leaving ferretted out the whole story.

DROUGHT IN NORTH CHINA

North China is suffering from the worst drought since the Boxer year 1900. This will not immediately affect railway revenues, as it will stimulate shipments of grain from remote districts, but the distress will unavoidably set back progress in this region very considerably.

Equipment and Supplies

Locomotives

THE LOS ANGELES & SALT LAKE has ordered 10 locomotives from the American Locomotive Company.

THE CAMOA QUARRY COMPANY, Havana, Cuba, has ordered one locomotive from the Vulcan Iron Works.

THE LUNGHAI RAILROAD, China, will ask for prices soon, through a New York Japanese export house, on 8 Mikado type locomotives.

THE MARION & EASTERN is in the market for one second-hand Consolidation type locomotive, also for a small ditcher with extra long boom.

THE GULF COAST LINES, reported in the *Railway Age* of September 24 as inquiring for 3, 4-6-0 type locomotives, have ordered 5 locomotives from the American Locomotive Company.

THE LOS ANGELES & SALT LAKE has ordered 10 Mikado type locomotives from the American Locomotive Company. These locomotives will have 26 in. by 28 in. cylinders; a total weight of 300,000 lb., and will be equipped with superheaters.

THE TENNESSEE CENTRAL, reported in the *Railway Age* of August 20 as inquiring for some locomotives, has ordered 4 Mikado type locomotives from the American Locomotive Company. These locomotives will have 20 in. by 28 in. cylinders; a total weight in working order of 197,000 lb., and will be equipped with superheaters.

THE SOUTH BUFFALO RAILWAY has ordered 2 six-wheel 0-6-0 type locomotives and 1 eight-wheel 0-8-0 type locomotive from the American Locomotive Company. The six-wheel locomotives will have 20 in. by 26 in. cylinders and a total weight of 154,000 lb. in working order. The eight-wheel locomotive will have 22 in. by 28 in. cylinders and will have a total weight of 209,000 lb. These locomotives will be equipped with superheaters.

Freight Cars

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 6 caboose car bodies.

THE CANADIAN PACIFIC is inquiring for 500 hopper coal cars of 75 tons capacity.

THE CAROLINA, CLINCHFIELD & OHIO is inquiring for 100, 40-ft. flat cars of 50 tons capacity.

THE SOUTHERN RAILWAY is asking for prices on 2,500 steel center sill box cars of 40 tons capacity.

THE SEABOARD AIR LINE is asking for alternate bids on 350 composite hopper cars in place of 350 steel cars.

THE EL PASO & SOUTHWESTERN, reported in the *Railway Age* of Sept. 24 as inquiring for 75, 10,000-gal. tank cars, has ordered from the general American Tank Car Corporation.

THE WEST INDIA SUGAR FINANCE CORPORATION, 129 Front street, New York, reported in the *Railway Age* of October 8, as being in the market for 250 cane cars of 20 tons capacity, has ordered this equipment from the Magor Car Company.

Passenger Cars

THE SOUTHERN RAILWAY is inquiring for 50 coaches and 50 baggage cars.

THE NATIONAL BISCUIT COMPANY, New York, is inquiring for one Arms Palace horse car.

THE NEW YORK, NEW HAVEN & HARTFORD is inquiring for 8 steel motor cars and 14 trailer cars.

THE CUBA RAILROAD has ordered 4 sleeping cars and 10 combination baggage and express cars from the Pullman Company.

PEKIN-SUIYUAN RAILWAY.—Car builders have an inquiry for 60 passenger cars to be used on this road and the Peking-Hankow.

Supply Trade News

Horace B. Hensch, vice-president of **Templeton, Kenly & Co., Ltd.**, Chicago, has resigned.

F. Rodger Imhoff, field engineer at Detroit, Mich., for the **Precision & Thread Grinder Manufacturing Company**, Philadelphia, Pa., has been appointed sales manager.

R. E. Bressler, manager of the **Jordan Company**, East Chicago, Ind., has resigned to accept a position with the **Western Wheeled Scraper Company**, Aurora, Ill.

The **American Car & Foundry Company**, Madison, Ill., has awarded a contract to the **Wimmer Construction Company**, St. Louis, Mo., for a new one-story spring works building, to cost approximately \$50,000.

A. L. Greenbaum, supervisor of work equipment and motor cars of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been appointed manager of the **O. F. Jordan Company**, East Chicago, Ind., effective September 15.

A special committee appointed by the Secretary of War to investigate charges of irregularity in the award of \$2,200,000 to the Standard Steel Car Company for the settlement of claims arising out of the cancellation of war contracts, has made a report which was made public by the War Department that the award of \$2,200,000 was an adjustment made under the Dent act "upon a fair and equitable basis" and that it did not "include prospective or possible profits or any part of the contract beyond the goods and supplies delivered to and accepted by the United States, and the reasonable remuneration for expenditures and obligations or liabilities necessarily incurred in performing or preparing to perform said contract or order." The committee moreover finds no fraud in the settlement and completely exonerates the contractor and all government officers connected with the settlement from any such imputation. The committee is of the opinion that the government exercised good business judgment in making the award for the amount and at the time it did.

Iron and Steel

The **MINNEAPOLIS & ST. LOUIS** has ordered 5,000 tons of rails from the **United States Steel Corporation** for 1921 delivery.

The **CHICAGO & NORTH WESTERN** has ordered 910 tons of steel from the **American Bridge Company** for ore dock work at Ashland, Wis.

HOLST & VADILLO, 161 Maiden Lane, New York, have ordered 40 tons of railroad spikes from the **Consolidated Steel Company**, for export to Cuba.

The **ST. LOUIS-SOUTHWESTERN** has ordered deck plate girder spans amounting to 264 tons from the **American Bridge Company** for work at Plano, Texas, and Addison.

The **GOVERNMENT OF THE NETHERLANDS**, Colonial Department, 17 Battery Place, New York, is inquiring for 20,000 tons of 82-lb. rails for use on the State Railways in Java.

Signaling

The **CHICAGO & ALTON** has authorized the continuance of the installation of automatic block signals on double track between Nilwood, Ill., and Rinaker, a distance of about 11 miles.

The **GREAT NORTHERN** has ordered from the **General Railway Signal Company**, Rochester, N. Y., an electric interlocking, Model 2, unit lever type, 64-lever machine, for Carlton, Minn., to be installed by the railroad company's forces.

The **ATCHISON, TOPEKA & SANTA FE** has ordered from the **General Railway Signal Company**, Rochester, N. Y., an electric interlocking machine for Newkirk, Okla. The machine will have 15 working levers, and will be installed by the company's forces.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company is accepting bids for the construction of two lavatory buildings, one a two-story structure, and the other a one-story building, at Shopton, Iowa, to cost approximately \$45,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has awarded a contract to the **Railway Water & Coal Handling Company**, Chicago, for the construction of a water station and treating plant at Valley Junction, Iowa, to cost approximately \$85,000. The **Railway Water & Coal Handling Company** will also install a fire protection system in the company's shops at Shawnee, Okla., at an approximate cost of \$17,000.

CANADIAN NATIONAL.—This company contemplates improvements to its plant at Thaudiere Junction, Quebec, to cost approximately \$200,000, which will include an extension to the enginehouse and the installation of a coaling plant.

CHICAGO UNION STATION.—This company contemplates the construction of a viaduct on Madison street, Chicago east, extending from Canal street to the bridge across the Chicago river, and it is understood that the company will shortly accept bids for the structural steel required for this work.

DETROIT & Ironton.—The Interstate Commerce Commission has announced a hearing at Lansing, Mich., on October 19, on the application of this company for a certificate of public convenience and necessity for the construction and operation of a new line in Wayne county, Michigan.

GRAND TRUNK.—This company contemplates the construction of a frame engine house at Kalamazoo, Mich. The company has awarded a contract to the **Roberts & Schaefer Company**, Chicago, for the installation of electric elevating equipment in the coaling station at its Milwaukee Junction yards in Detroit, Mich.

MICHIGAN NORTHERN.—The Interstate Commerce Commission has announced a hearing at Lansing, Mich., on October 21, on the application of this company for a certificate authorizing it to construct and operate a new line in Midland, Isabella, Gratiot, Clinton, Eaton, and Ingham counties, Michigan.

MINNEAPOLIS & ST. LOUIS.—This company contemplates the rebuilding of its terminal facilities, including its roundhouse, at Fort Dodge, Iowa.

MISSOURI PACIFIC.—This company has awarded a contract to **J. E. Nelson & Sons**, Chicago, for the construction of a reservoir, dam, pump house, and water lines, at Wagstaff, Kans., at an approximate cost of \$90,000.

OAHU RAILWAY & LAND COMPANY, HONOLULU, T. H.—This company is constructing 13 miles of second main line track of 3 ft. gage. Sixty pound rails are being used. The improvement will necessitate the construction of five new concrete bridges and a few additional sidings, the purchase of 16 automatic block signals and the making of several cuts.

PENNSYLVANIA.—This company has under construction an addition to one of its electrical substations at Philadelphia, Pa., in which new equipment to cost about \$100,000 will be installed. The building will be 30 ft. by 30 ft. and 60 ft. high, of brick, terra cotta and reinforced concrete, and will cost approximately \$60,000. The contract for the construction of the building has been let to **F. A. Havins Company**, Philadelphia, Pa. The city officials of Jersey City, N. J., have approved the proposal of this company that it construct a new overhead vehicular bridge over its tracks at Tonelle street to replace the present structure. The engineering department is now working on plans. This bridge will have a total width of 50 ft. and will be 97 ft. long, allowing for the passage of eight tracks under it—two more than the present structure provides space for. The superstructure of the new bridge will be of steel, while the bridge itself will be of concrete construction with an asphalt wearing surface on the cover deck.

PERE MARQUETTE.—The Interstate Commerce Commission has announced a hearing at Lansing, Mich., on October 20, on the application of this company for a certificate authorizing it to abandon a branch line in Kalkaskia county, Michigan.

TAMPA SOUTHERN.—This company has again taken up the construction of a 9-mile belt line from Gillette, Fla., to Palmetto, via Ellenton, which work was held up during the war period. The country to be traversed is relatively flat. Little grading and no bridges, other than small culverts, will be necessary. The contract for grading has been let to E. C. Stover, Tampa, Fla. The purpose of the new line is to expedite the movement of perishable foodstuffs around Tampa Bay.

TEXAS CENTRAL.—This company contemplates the rebuilding of its station at Albany, Tex., which was burned recently.

WISCONSIN & MICHIGAN.—This company has applied to the Interstate Commerce Commission for authority to resume the operation of its connection between Faithorn Junction and Aragon Junction, Mich., a distance of 7.17 miles, on which the rails had been taken up. The Interstate Commerce Commission has announced a hearing at Lansing, Mich., on October 26, on the application of this company for a certificate authorizing it to resume the operation of its abandoned line.

WENATCHEE SOUTHERN.—Articles of incorporation have been filed by this company at Olympia, Wash., contemplating the construction of a road from Wenatchee, Wash., to Pasco and Kennewick, connecting the Great Northern, the Chicago, Milwaukee & St. Paul, the Northern Pacific, and the Union Pacific.

WESTERN PACIFIC.—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to construct a branch line of 1¼ miles from its main line at or near Bidwell, Cal., to connect with a logging road.

Railway Financial News

BALTIMORE & OHIO.—This company has applied to the Interstate Commerce Commission for authority to issue \$3,000,000 of refunding and general mortgage, series B, 6 per cent bonds, to be exchanged for an equal amount of series A, 5 per cent bonds heretofore issued under the same mortgage, and to pledge \$3,000,000 of series A, 5 per cent bonds and \$10,000,000 of series B, 6 per cent bonds with the director general of railroads in anticipation of a settlement with the Railroad Administration as security for \$9,000,000 of a general balance due the government to be funded for 10 years. It is the purpose of the company to obtain bonds paying a higher rate of interest more nearly in conformity with the present rates of interest and to obtain a higher value for the purpose of the pledge. The company has executed or is about to execute an agreement with the director general under which it will issue its promissory note for \$9,000,000 at 6 per cent.

BOSTON & MAINE.—A special meeting of stockholders has been called for October 26 to act on amending the equipment trust agreement, dated January 15, 1920, on an issue of \$10,000,000 bonds to be secured by present mortgages; also on authorizing equipment trust agreement to provide for purchase of 50 locomotives through equipment notes not exceeding \$3,000,000; on a loan from the United States and on authorizing issue of bonds or notes as prescribed by the government in connection with the loan; to act on an issue of bonds for paying or refunding bonds of the Boston & Lowell and Connecticut River Railroads aggregating \$609,000, which mature January 1, 1921.

CHICAGO, MILWAUKEE & ST. PAUL.—This company has effected a final settlement with the Railroad Administration of the accounts in favor of and against the government for causes arising out of the federal control of its property, by which it receives a lump sum payment and funds its indebtedness to the government for capital expenditures for 10 years. The Railroad Administration has not announced the amount of the settlement, pending action on it by the company's board of directors. The company has paid off its loan of \$11,500,000 from the War Finance Corporation.

CHICAGO, ROCK ISLAND & PACIFIC.—The Interstate Commerce Commission has approved the making of a loan of \$2,000,000 to this company to aid it in meeting its 1920 maturing indebtedness. The carrier itself is required to finance in connection with its maturing indebtedness approximately \$6,000,000.

DETROIT & Ironton.—The Interstate Commerce Commission has announced a hearing at Lansing, Mich., on October 19, on the application of this company for authority to issue its corporate stock and assume certain obligations as lessee respecting the securities of the Detroit, Toledo & Ironton.









The lease of the Detroit, Toledo & Ironton to the new Detroit & Ironton Company, controlled by Henry Ford, was upheld by Justice Finch in the New York State Supreme Court on October 7. His opinion was given in answer to the petition of minority stockholders for an injunction to prevent the directors from leasing the line to the Ford interests.

KANSAS CITY, MEXICO & ORIENT.—The Interstate Commerce Commission on October 11, upon a supplemental application, certified its approval of a loan to William T. Kemper, receiver, of \$2,500,000 to aid him in meeting maturing indebtedness, consisting of receiver's certificates due December 1, 1920. The loan covers the full amount of the applicant's maturities and was approved after a conclusive showing that operation of the carrier would have to be suspended unless the aid of a loan were given.

LONG ISLAND.—The Interstate Commerce Commission on October 4 certified its approval of a loan to this company of \$718,000 to aid the carrier in purchasing four switching locomotives and six 10-wheel standard freight locomotives at an estimated total cost of \$437,000, and in making additions and betterments to roadway and structures at a cost of \$500,000. The carrier itself is required to finance \$218,000 of the cost of the equipment to meet the loan of the government.

The High Cost of Experience

By GEO. BRADSHAW
(Copyright, 1920)

NINE little railroad men handling freight;
One stepped on a rusty  —that left eight.
Eight little railroad men surfacing track eleven;
One didn't hear the  and then there were seven.
Seven little railroad men with a lot of cars to fix;
One failed to post blue  and then there were six.
Six little railroad men, all spry and live;
One rode on engine  and then there were five.
Five little railroad men, all warned before;
One went between moving  ; then there were four.
Four little railroad men with good eyes to see;
One didn't wear his  and then there were three.
Three little railroad men, on train overdue;
One left a  open and then there were two.
Two little railroad men on a switch run;
One left a  foul and now there's only one.
Said one little railroad man, left all alone;
"Now, while my skin is whole and my life's my own,
I'll take your Safety Dope, Doc,—I'll take it straight—
Before I go the way of the other eight."

An Effective Safety Poster Prepared and Distributed by
Geo. Bradshaw, Supervisor of Safety, Pere Marquette.

MISSOURI PACIFIC.—The Interstate Commerce Commission on October 11 approved a loan to this company of \$8,671,760, to aid it in meeting its maturing indebtedness and in providing itself with new equipment and additions and betterments to way and structures.

NEW ORLEANS, TEXAS & MEXICO.—This company has applied to the Interstate Commerce Commission for authority to issue eight promissory notes for \$25,000 each at 7 per cent, secured by an equipment trust obligation covering 10 steel passenger coaches and 5 steel baggage cars being constructed by the American Car & Foundry Company. It also asks authority to assume an obligation dated June 1, by which the company agrees to pay to the War Department \$12,500 per annum for nine years at 6 per cent as the balance of the purchase price for 5 Russian locomotives. It also asks authority to issue \$800,000 of its first mortgage 6 per cent gold bonds and \$530,000 of 5 per cent non-cumulative income bonds, to be deposited as collateral for a loan from the government, and to issue non-cumulative 5 per cent income bonds not exceeding \$280,000, and its capital stock or voting trust certificates not exceeding \$175,000, to be delivered to citizens of France and Belgium holding bonds issued under the mortgage of May 17, 1910, and depositing them in compliance with the plan of organization of August 25, 1915.

NEW YORK, NEW HAVEN & HARTFORD.—The stockholders at a special meeting at New Haven, Conn., on October 11 approved the directors' recommendations to put a general mortgage on the company's properties to assist in financing the indebtedness of the company to the government. Final action will be taken at a meeting on November 11.

PHILADELPHIA & READING.—Charles H. Ewing and George M. Shriver have been elected directors to succeed George F. Baker and Daniel Willard.

SOUTHERN RAILWAY.—Exclusive of \$4,195,000 in wages that were made retroactive to May 1 by the award of the Railroad Labor Board, this company in the first six months following the termination of federal control earned \$642,078 in excess of the government guaranty, which it could have accepted, but did not. Referring to the results of operation, President Harrison said: "If, by reason of the addition to its expenses for four months of the period of approximately \$4,195,000 in increased wages, under the award of the Railroad Labor Board on July 20, 1920, without a contemporary compensation of increased rates, the Southern proper failed to secure the equivalent of the full guaranty in the period, nevertheless its 'railway operating income' was \$3,449,734 greater than that from the government operation of the same lines in the corresponding months of 1919, and, moreover, the Southern earned its preferred stock dividend for the period by its own operations. Comparing like with like, the result of operation of the Southern was thus more than \$7,500,000 better than the government operation."

TEXAS & PACIFIC.—The stockholders on October 21 will vote upon the following: The approval and ratification of a proposed agreement between this company, the Trans-Mississippi Terminal Railroad, the Missouri Pacific, J. L. Lancaster and Charles L. Wallace as receivers of the Texas & Pacific, the holders of the extended 6 per cent three-year gold notes of the Trans-Mississippi Terminal Company and the Equitable Trust Company of New York, trustee, further extending and guaranteeing jointly and severally with the Missouri Pacific and J. L. Lancaster and Charles L. Wallace, receivers of the Texas & Pacific, as to principal and interest, \$3,653,000 of the extended three-year gold notes of the Trans-Mississippi Terminal Company for the term of three years from the date of their maturity as extended, November 1, 1920, to November 1, 1923.

TRANS-MISSISSIPPI TERMINAL.—See Texas & Pacific.

WESTERN MARYLAND.—This company has applied to the Interstate Commerce Commission for authority to issue \$2,700,000 of first and refunding mortgage 5 per cent bonds dated July 1, 1917, and maturing in 1967, to be pledged as collateral security for a loan from the revolving fund. The company has filed an application for a loan of \$1,372,800 for the purchase of 20 freight locomotives, costing \$750,000, and additions and betterments, costing \$622,000, and has since filed a supplemental application for \$750,000 for the purchase of 20 additional freight locomotives.

Railway Officers

Executive

J. S. Hungerford, assistant vice-president of the Canadian National, with headquarters at Toronto, Ont., has been elected vice-president in charge of operation, with the same headquarters; **C. S. Gzowski**, special engineer, with headquarters at Toronto, has been appointed assistant to Mr. Hungerford, effective October 1.

H. S. Rubens, vice-president and director of the Cuba Railroad, with headquarters at New York, has been elected chairman of the board; **W. V. Griffin** has been elected vice-president, with headquarters at New York; **J. M. Gruber**, formerly vice-president of the Great Northern, has been elected vice-president in charge of operation, with the same headquarters.

Financial, Legal and Accounting

William H. Baker, assistant secretary of the Cuba Railroad, with headquarters at New York, has been appointed secretary, with the same headquarters, succeeding Henry W. Bull, resigned.

Daniel Taylor, assistant general attorney of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been promoted to general attorney, succeeding A. B. Enoch, effective October 1.

P. J. Farley has been appointed general paymaster of the Canadian National and the Grand Trunk Pacific, with jurisdiction over the lines west of Port Arthur, Ont., and with headquarters at Winnipeg, Man.

E. S. Benson, controller of the Chicago & Alton, with headquarters at Chicago, and **J. H. Howard**, general claim agent, Chicago, have had their jurisdiction extended over these respective departments of the Peoria Railroad Terminal Company, effective September 26, with the same headquarters.

H. G. Foreman, assistant treasurer of the Canadian Northern, with headquarters at Toronto, Ont., has been appointed treasurer of the Canadian National and the Grand Trunk Pacific, with the same headquarters. **F. J. Buller**, **T. J. Macabe**, and **C. H. Hickie**, have been appointed assistant treasurers, with headquarters at Toronto, Ont.

Oscar M. Longnecker has been elected treasurer of the Southern Pacific lines in Texas, together with the Rio Bravo Oil Company, the Direct Navigation Company and the Southern Pacific Building Company, with headquarters at Houston, Texas, effective October 1, succeeding C. B. Udell, who has retired. Mr. Longnecker entered railroad service with the Southern Pacific as a clerk in the Houston office in October, 1898. He was promoted to cashier in 1902, a position which he held until federal control, when he was made corporate treasurer of the Southern Pacific lines in Texas and Louisiana. In March, 1920, he was elected assistant treasurer of the Texas lines and was serving in that position at the time of his recent promotion.

Operating

L. Holladay has been appointed train master of the Denver & Salt Lake, with headquarters at Tabernash, Colo., effective October 7.

J. J. Jordan has been appointed assistant superintendent on the staff of the general manager of the Southern Pacific, with headquarters at San Francisco, Cal., effective August 16.

G. J. Shreeve, superintendent of the Belt Railroad, with headquarters at Clearing, Ill., has been promoted to general superintendent, with headquarters at Chicago, effective September 21. **J. C. Hemming**, assistant superintendent, with headquarters at Clearing, succeeds Mr. Shreeve.

E. E. Carter, assistant superintendent on the St. Louis-San Francisco, with headquarters at Neodesha, Kansas, has been appointed superintendent of terminals, with headquarters at West Tulsa, Okla., effective October 11, succeeding **F. C. Gow**, who has been assigned to other duties.

M. Sheffer, road foreman of engines on the Chicago, Great Western, with headquarters at St. Paul, Minn., has been appointed train master of the Northern division, with the same headquarters, effective October 1, succeeding **G. J. Congden**, who has resigned. **A. K. Rowe** succeeds Mr. Sheffer.

E. R. Gorman, assistant superintendent of the Eastern division of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at Eau Claire, Wis., has been promoted to superintendent of motive power and machinery, with headquarters at St. Paul, Minn., effective September 15, succeeding **J. O. Enockson**, deceased. **A. J. Strouts** succeeds Mr. Gorman.

H. J. Plumhof, assistant to the vice-president in charge of operation of the Union Pacific, with headquarters at Omaha, Neb., has been appointed general superintendent of the Southern district, with headquarters at Kansas City, Mo., effective October 1, succeeding **E. Stenger**, resigned. **W. H. Guild**, assistant to the general manager, succeeds Mr. Plumhof.

E. L. King, superintendent of telegraph of the Southern Pacific, with headquarters at San Francisco, Cal., has been promoted to superintendent of the Salt Lake division, with headquarters at Ogden, Utah, effective October 1, succeeding **B. A. Campbell**, who has been appointed assistant superintendent of the Western division, with headquarters at Oakland Pier, Cal. **Edward Entelman**, assistant superintendent of the Western division, with headquarters at Oakland Pier, Cal., succeeds Mr. King.

W. A. Kirkpatrick, whose promotion to superintendent of transportation of the Canadian National, with headquarters at Saskatoon, Sask., was announced in the *Railway Age* of September 24 (page 550), was born at West Louie, Ont., on August 28, 1883. He entered railroad service in July, 1898, with the Michigan Central, being stationed as operator and agent at various points on the Canadian division until September, 1902, when he became a despatcher on the Pere Marquette. After two years of service with this road, he became an operator and ticket agent on the Canadian Pacific, but soon left that road to accept a position as operator and despatcher on the Canadian Northern, now consolidated with the Canadian National. In December, 1906, he was promoted to chief clerk to the superintendent of that road, and chief clerk to the general superintendent, successively, positions which he held until 1910, when he was again promoted to inspector of transportation. Three years later, Mr. Kirkpatrick was promoted to train master of the Canadian Northern, with headquarters at Neepawa, Man., the position he held at the time of his recent promotion.

L. F. Muncey, whose promotion to superintendent of the Canadian National, with headquarters at Kamloops, B. C., was announced in the *Railway Age* of Sept. 24, (page 551), was born at Kensington, Prince Edward Island, on March 15, 1876. He entered railway service in August, 1891, as an operator on the New Brunswick & Prince Edward. In August, 1896, he became an operator on the Prince Edward Island and served with that company as relief agent and clerk in the auditing department until June, 1901, when he was appointed relief agent on the Canadian Northern. During the next 18 years Mr. Muncey was employed continuously with that road. He was made traveling auditor in 1902, and served both in that position and as chief traveling auditor until 1909, when he became an agent at various points on the line. From December, 1914, to May, 1919, he was general chairman of the Order of Railroad Telegraphers of the Canadian Northern, leaving that position to accept an appointment as assistant superintendent on the Canadian National, with headquarters at Vancouver, B. C., the position he held at the time of his recent promotion.

C. H. Brown, whose promotion to superintendent of transportation of the western lines of the Canadian National, with headquarters at Edmonton, Alta., was announced in the *Railway Age* of September 24 (page 550), was born at Oswego, N. Y., on August 24, 1869, and entered railroad service in 1887, as an agent and operator on the Rome, Watertown & Ogdensburg, now part of the New York Central. In 1893 he became a despatcher on the New York Central at Oswego, N. Y., and served in that capacity and as chief despatcher until 1902, when he was employed by the Grand Trunk as a despatcher at Belleville, Ont. In 1904 he returned to the New York Central, where he was appointed successively yard master, assistant train master and train master of the Oswego division. From 1906, when he again became a despatcher on the Grand Trunk, with headquarters at London, Ont., Mr. Brown has served continuously with Canadian lines. In 1909 he was promoted to chief despatcher on the Grand Trunk at Stratford, Ont., in 1910 he was made train master at Hamilton, Ont., and from 1912 to 1920 he served on the Grand Trunk Pacific, as despatcher, chief despatcher, and finally, as assistant superintendent, the position he held at the time of his recent promotion.

Traffic

F. A. Edmondson has been appointed commercial agent of the St. Louis-San Francisco, with headquarters at Chicago.

A. E. Lee, general freight agent of the Chicago & Alton, with headquarters at Chicago, has resigned from railroad service.

W. G. Kidd has been appointed general agent of the Wabash, with headquarters at Birmingham, Ala., effective October 1.

Daniel A. Gerlach has been appointed general agent of the New York Central, with headquarters at New Haven, Conn., effective October 1.

E. W. Green has been appointed general agent of the Kansas City, Mexico & Orient, with headquarters at Chicago, effective October 1.

Theodore Dehon, general southern agent of the Carolina, Clinchfield & Ohio with headquarters at Spartanburg, S. C., has been appointed general freight agent with headquarters at Johnson City, Tenn., effective October 1, the office of general southern agent having been abolished. **Sam C. Smith** has been appointed commercial agent, with headquarters at Johnson City, effective the same date.

J. H. Cummings has been appointed district passenger agent on the Chicago Great Western, with headquarters at Chicago, effective October 1, succeeding **T. N. Butzen**, who has resigned; **L. N. St. John** has been appointed general agent, with headquarters at New Orleans, La., effective October 10; **W. F. Stewart** has been appointed general agent, with headquarters at Spokane, Wash., effective September 20.

Care L. Senter, who has been appointed traffic manager of the Georgia, Florida & Alabama, with headquarters at Bainbridge, Ga., as noted in the *Railway Age* of September 24, (page 551), was born at Blue Springs, Tenn., on November 23, 1886. He received a high school education at Chattanooga, Tenn. His first railroad work began on May 20, 1903, with the Cincinnati, New Orleans & Texas Pacific, at Chattanooga. In 1906 he became rate and quotation clerk of the Atlantic Great Southern, now part of the Southern. In 1908, after a year spent out of railroad service, he became chief rate clerk of the Seaboard Air Line and retained that position for 2½ years. He then became route clerk of the Atlantic Coast Line at High Springs, Fla. Later he served in clerical capacities for the Georgia, Florida & Alabama at Wilmington, N. C., and Savannah, Ga. He was afterwards promoted to chief clerk to the traffic manager at Bainbridge, Ga., which position he held at the time of his recent promotion.

E. F. Benson, who has been appointed manager of the newly-created department of immigration and industry of the Northern Pacific, with headquarters at St. Paul, Minn.,

was born at Swan's Island, Maine, on February 2, 1861. He graduated from Boston University Law School in 1881, and served for 25 of the past 35 years with the Northern Pacific. All of this service was in the land department of the road, and most of it was at various points in the state of Washington. From 1908 to 1910, he was chief land examiner of the Northern Pacific, with headquarters at Miles City, Mont. In 1913 he was appointed receiver of the Hanford Irrigation & Power Company, operating in the state of Washington, and in 1915 he added to his other duties the receivership of the Attalia Land & Irrigation Company. At the time of his recent appointment, Mr. Benson was serving as commissioner of agriculture of the state of Washington, a position to which he had been appointed by Governor Lister, and in which he had continued under the present incumbent, Governor Hart.

Mechanical

Thomas M. Allison has been appointed road foreman, with headquarters at Pasco, Wash., effective October 5, succeeding C. A. Wirth, promoted.

A. B. Clark, master mechanic on the Southern division of the Chicago Great Western, with headquarters at Des Moines, Iowa, has been promoted to superintendent of shops, with headquarters at Oelwein, Iowa, effective October 1, succeeding M. H. Oakes. **H. Brinkman** succeeds Mr. Clark.

T. M. Allison has been appointed road foreman of engines on the Northern Pacific, with headquarters at Pasco, Wash., succeeding **P. A. Wirth**, whose promotion to master mechanic, with headquarters at Pasco, was announced in the *Railway Age* of September 10, (page 468).

J. J. Connors, who has been appointed superintendent of motive power of the Denver & Salt Lake, with headquarters at Denver, Colo., effective September 15, was born at Milwaukee, Wis., in 1860, and entered railroad service in 1875 in the shops of the Chicago, Milwaukee & St. Paul, at Milwaukee. During the next 43 years he served continuously with the St. Paul, being promoted successively to foreman, general foreman, master mechanic and assistant superintendent motive power. In 1918 Mr. Connors became general superintendent of the Morrison Foundry Company, the position he held at the time of his recent appointment.

Engineering, Maintenance of Way and Signaling

W. C. Allen has been appointed assistant valuation engineer of the Fort Worth & Denver City and the Wichita Valley, with headquarters at Fort Worth, Tex., effective August 21.

Samuel P. Coffin, supervisor of bridges and buildings of the Boston & Maine, with headquarters at Boston, Mass., has been transferred to Salem, Mass., effective October 1, succeeding B. F. Pickering, deceased.

A. F. Stewart, chief engineer of the Canadian National, Eastern Lines, and the Canadian National, with headquarters at Toronto, Ont., has been transferred to Moncton, N. B., succeeding C. B. Brown, promoted; **H. T. Hazen**, engineer maintenance of way, with headquarters at Toronto, will perform temporarily the duties of chief engineer in addition to his own, effective October 1.

Purchasing and Stores

William W. Morris, who has been appointed purchasing agent of the Northwestern region of the Pennsylvania System, with headquarters at Chicago, succeeding I. B. Thomas, was born in Philadelphia, Pa., on October 3, 1879, and entered railroad service as a clerk in the general offices of the New York, Philadelphia & Norfolk, at Philadelphia, on November 1, 1896. In 1898 he became clerk to the secretary of the Norfolk & Portsmouth Belt Line, in addition to his duties in the office of the president of the New York, Philadelphia & Norfolk. Four years later he was made chief clerk in the purchasing department of the New York, Philadelphia & Norfolk, and at the same time became chief clerk to the auditor of the Norfolk & Portsmouth Belt Line. In January, 1909, when the New York, Philadelphia & Norfolk was taken

over by the Pennsylvania, he was transferred to the purchasing department of the latter road, with headquarters at Philadelphia, where he remained until February, 1918, when he accompanied Samuel Porcher, purchasing agent of the Pennsylvania Railroad, to Washington. During his service with the Railroad Administration, Mr. Morris was made secretary to the Central Advisory Purchasing Committee, and later, when that committee was abolished, became assistant to the Director of Purchases. When the roads were returned to private control, on March 1, 1920, he returned to the Pennsylvania as assistant to the general purchasing agent, with headquarters at Philadelphia, the position he held at the time of his recent promotion.

Railroad Administration

George M. Huss, whose appointment as assistant to the director of the Division of Liquidation Claims of the Railroad Administration was noted in last week's issue, has also been reappointed chairman of the Committee on Claims, the position which he held prior to his resignation on June 1 on account of illness.

D. C. Porteous, who was recently appointed acting director of the Division of Finance of the Railroad Administration, succeeding Swagar Sherley, resigned, has now been appointed director of the division. Mr. Porteous was formerly assistant director of the division and has been connected with the Railroad Administration since its organization. He was formerly secretary of the Seaboard Air Line.

Obituary

W. A. Hall, assistant engineer in the construction department of New York Central, died recently at Morrisville, N. Y., at the age of 46.

David J. Curran, treasurer of the Cincinnati, Indianapolis & Western, with headquarters at Indianapolis, Ind., died October 10, at the age of 48, at his home in Indianapolis.

E. Tiffin, formerly general traffic manager of the Intercolonial and the Prince Edward Island, now parts of the Canadian National, with headquarters at Moncton, N. B., died recently at Preston, Ont.

W. N. Foreacre, general manager of the Southern, Lines East, with headquarters at Charlotte, N. C., was found dead in his private car at Hendersonville, N. C., on October 12, his death being attributed to acute indigestion.

THE DELICATE POSITION OF THE BOSTON & ALBANY.—It is reassuring to read what a well-known British journalist, H. W. Nevins, has recently said about us. He thinks that New England is notable for the charming politeness and modesty of its people, and suggests that this may be derived from the primitive Christianity of the Pilgrims—from their grave living, their indifference to temporal things; from minds fixed upon the eternal, and a sense of the equality in the presence of God. * * * But are our manners as good as Mr. Nevins thinks or as bad as we ourselves think? In Boston, recently, the manners of Boston & Maine trainmen have been singled out for praise, and this agrees with the observations of a New York man, who says that the dividing line between spontaneous courtesy and indifferent breeding in New England is the line of the Boston & Albany Railroad. His meaning is not that Boston & Albany employees are discourteous, but that this line marks the division between the driving industrial and commercial atmosphere of southern New England and the easier-tempered agricultural north. The difference, if it exists, is probably due, in part, to the effects upon character not only of different occupations, but of the forced contacts of life in the cities and industrial towns, which have made the native population more self-centered and more standardized, less simple and less kindly. In the rural districts of northern and western New England, Jeffersonian democracy had its staunchest adherents, and, simultaneously, that revolt against the cruelties of Calvinist doctrine, which was embodied in the free-will Baptist and Christian movements, was sweeping through Maine, New Hampshire, Vermont and northwestern Massachusetts.—*Springfield Republican*.